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ANNOUNCEMENT.

On July 1, 1903, the Bureau of Foreign Commerce of the Department of State, which has had charge of the publication and distribution of the Consular Reports, was transferred to the Department of Commerce and Labor, in pursuance of provisions in the act of Congress approved February 14, 1903, creating that Department, and consolidated with the Bureau of Statistics, transferred from the Treasury to the new Department. Reports from consular officers on commercial and industrial subjects will hereafter be transmitted through the Department of State to the Department of Commerce and Labor, and the latter will publish and distribute them.

Requests for consular reports should hereafter be made to the Department of Commerce and Labor.

The publications formerly issued by the Bureau of Foreign Commerce will be issued in similar form by the Department of Commerce and Labor. They are as follows:

I.—Commercial Relations, being the annual reports of consular officers on the commerce, industries, navigation, etc., of their districts.

II.—Review of World's Commerce, being a summary of the annual reports contained in Commercial Relations.

III.—Consular Reports, issued monthly, and containing miscellaneous reports from diplomatic and consular officers.

IV.—Advance Sheets, Consular Reports, issued daily, except Sundays and legal holidays, for the convenience of the newspaper press, commercial and manufacturing organizations, etc.

V.—Exports Declared for the United States, issued quarterly, and containing the declared values of exports from the various consular districts to the United States for the preceding three months. There is also issued an annual edition of Declared Exports, embracing the returns for the fiscal year.

VI.—Special Consular Reports, containing series of reports from consular officers on particular subjects, made in pursuance to instructions from the Department.

Following are the special publications issued prior to 1890:

Labor in Europe, 1878, one volume; Labor in Foreign Countries, 1884, three volumes; Commerce of the World and the Share of the United States Therein, 1879; Commerce of the World and the Share of the United States Therein, 1880–81; Declared Exports for the United States, First and Second Quarters, 1883; Declared Exports for the United States, Third and Fourth Quarters, 1883; Cholera in Europe in 1884, 1885; Trade Guilds of Europe, 1885; The Licorice Plant, 1885; Forestry in Europe, 1887; Emigration and Immigration, 1885–86 (a portion of this work was published as Consular Reports No. 76, for the month of April, 1887); Rice Pounding in Europe, 1887; Sugar of Milk, 1887; Wool Scouring in Belgium, 1887; Cattle and Dairy Farming in Foreign Countries, 1888 (issued first in one volume, afterwards in two volumes); Technical Education in Europe, 1888; Tariffs of Central America and the British West Indies, 1890.

The editions of all the above-named publications are exhausted, and the Department is therefore unable to supply copies.

Beginning with 1890, reports on special subjects were published in separate form, entitled SPECIAL CONSULAR REPORTS. There are now the following SPECIAL CONSULAR REPORTS:

Vol. 1 (1890).—Cotton Textiles in Foreign Countries, Files in Spanish America, Carpet Manufacture in Foreign Countries, Malt and Beer in Spanish America, and Fruit Culture in Foreign Countries.

Vol. 2 (1890 and 1891).—Refrigerators and Food Preservation in Foreign Countries, European Emigration, Olive Culture in the Alpes Maritimes, and Beet-Sugar Industry and Flax Cultivation in Foreign Countries.

Vol. 3 (1891).—Streets and Highways in Foreign Countries. (New edition, 1897.)

Vol. 4 (1891).—Port Regulations in Foreign Countries.

Vol. 5 (1891).—Canals and Irrigation in Foreign Countries. (New edition, 1898.)

Vol. 6 (1891 and 1892).—Coal and Coal Consumption in Spanish America, Gas in Foreign Countries, and India Rubber.

Vol. 7 (1892).—The Stave Trade in Foreign Countries and Tariffs of Foreign Countries.

Vol. 8 (1892).—Fire and Building Regulations in Foreign Countries.

Vol. 9 (1892 and 1893).—Australian Sheep and Wool and Vagrancy and Public Charities in Foreign Countries.

Vol. 10 (1894).—Lead and Zinc Mining in Foreign Countries and Extension of Markets for American Flour. (New edition, 1897.)

Vol. 11 (1894).—American Lumber in Foreign Markets. (New edition, 1897.)

Vol. 12 (1895).—Highways of Commerce. (New edition, 1899.)

Vol. 13 (1896 and 1897).—Money and Prices in Foreign Countries.

Vol. 14 (1898).—The Drug Trade in Foreign Countries.

Vol. 15 (1898).—Part I. Soap Trade in Foreign Countries; Screws, Nuts, and Bolts in Foreign Countries; Argols in Europe, Rabbits and Rabbit Furs in Europe, and Cultivation of Ramie in Foreign Countries. Part II. Sericulture and Silk Reeling and Cultivation of the English Walnut.

Vol. 16 (1899).—Tariffs of Foreign Countries. Part I. Europe. Part II. America. Part III. Asia, Africa, Australasia, and Polynesia. Supplement (1900). Tariffs of Chile and Nicaragua.

Vol. 17 (1899).—Disposal of Sewage and Garbage in Foreign Countries; Foreign Trade in Coal Tar and By-Products.

Vol. 18 (1900).—Merchant Marine of Foreign Countries.

Vol. 19 (1900).—Paper in Foreign Countries; Uses of Wood Pulp.

Vol. 20 (1900).—Part I. Book Cloth in Foreign Countries, Market for Ready-Made Clothing in Latin America, Foreign Imports of American Tobacco, and Cigar and Cigarette Industry in Latin America. Part II. School Gardens in Europe. Part III. The Stave Trade in Foreign Countries.

Vol. 21 (1900).—Part I. Foreign Markets for American Coal. Part II. Vehicle Industry in Europe. Part III. Trusts and Trade Combinations in Europe.

Vol. 22 (1900 and 1901).—Part I. Acetic Acid in Foreign Countries. Part II. Mineral-Water Industry. Part III. Foreign Trade in Heating and Cooking Stoves.

Vol. 23 (1901).—Part I. Gas and Oil Engines in Foreign Countries. Part II. Silver and Plated Ware in Foreign Countries.

Vol. 24 (1902).—Creameries in Foreign Countries.

Vol. 25 (1902).—Stored Goods as Collateral for Loans.

Vol. 26 (1903).—Briquettes as Fuel in Foreign Countries.

Of these SPECIAL CONSULAR REPORTS, Australian Sheep and Wool, Carpet Manufacture, Cotton Textiles in Foreign Countries, Files in Spanish America, Fire and Building Regulations, Fruit Culture, Gas in Foreign Countries, Heating and Cooking Stoves, India Rubber, Lead and Zinc Mining, Malt and Beer in Spanish America, Money and Prices, Paper in Foreign Countries, Port Regulations, Refrigerators and Food Preservation; Sericulture, etc.; Silver and Plated Ware; Vagrancy, etc., are exhausted, and no copies can be supplied by the Department.

Of the monthly CONSULAR REPORTS, many numbers are exhausted or so reduced that the Department is unable to accede to requests for copies. Of the publications available for distribution, copies are mailed to applicants without charge.

Persons receiving CONSULAR REPORTS regularly, who change their addresses, should give the old as well as the new address.

VALUES OF FOREIGN COINS AND CURRENCIES.

The following statements show the valuation of foreign coins, as given by the Director of the United States Mint and published by the Secretary of the Treasury, in compliance with the first section of the act of March 3, 1873, viz: "That the value of foreign coins, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," and that "the value of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the 1st day of January by the Secretary of the Treasury."

In compliance with the foregoing provisions of law, annual statements were issued by the Treasury Department, beginning with that issued on January 1, 1874, and ending with that issued on January 1, 1890. Since that date, in compliance with the act of October 1, 1890, these valuation statements have been issued quarterly, beginning with the statement issued on January 1, 1891.

The fact that the market exchange value of foreign coins differs in many instances from that given by the United States Treasury has been repeatedly called to the attention of the Bureau of Foreign Commerce. An explanation of the basis of the quarterly valuations was asked from the United States Director of the Mint, and under date of February 7, 1898, Mr. R. E. Preston made the following statement:

"When a country has the single gold standard, the value of its standard coins is estimated to be that of the number of grains fine of gold in them, 480 grains being reckoned equivalent to $20.67 in United States gold, and a smaller number of grains in proportion. When a country has the double standard, but keeps its full legal-tender silver coins at par with gold, the coins of both gold and silver are calculated on the basis of the gold value.

"The value of the standard coins of countries with the single silver standard is calculated to be that of the average market value of the pure metal they contained during the three months preceding the date of the proclamation of their value in United States gold by the Secretary of the Treasury. The value of the gold coins of silver-standard countries is calculated at that of the pure gold they contain, just as if they had the single gold standard.

"These valuations are used in estimating the values of all foreign merchandise exported to the United States."

The following statements, running from January 1, 1874, to April 1, 1903, have been prepared to assist in computing the values in American money of the trade, prices, values, wages, etc., of and in foreign countries, as given in consular and other reports. The series of years are given so that computations may be made for each year in the proper money values of such year. In hurried computations, the reductions of foreign currencies into American currency, no matter for how many years, are too often made on the bases of latest valuations. All computations of values, trade, wages, prices, etc., of and in the "fluctuating-currency countries" should be made in the values of their currencies in each year up to and including 1898, and in the quarterly valuations thereafter.

To meet typographical requirements, the quotations for the years 1875–1877, 1879–1882, 1884–1887, 1895, 1897, and 1899 are omitted, these years being selected as showing the least fluctuations when compared with years immediately preceding and following.

To save unnecessary repetition, the estimates of valuations are divided into three classes, viz: (A) countries with fixed currencies, (B) countries with fluctuating currencies, and (C) quarterly valuations of fluctuating currencies.

A.—*Countries with fixed currencies.*

The following official (United States Treasury) valuations of foreign coins do not include "rates of exchange."

Countries.	Standard.	Monetary unit.	Value in U.S. gold.	Coins.
Argentine Republic	Gold and silver	Peso	$0.96,5	Gold—argentine ($4.82,4) and ½ argentine; silver—peso and divisions.
Austria-Hungary*	Gold	Crown	.20,3	Gold—20 crowns ($4.05,2) and 10 crowns.
Belgium	Gold and silver	Franc	.19,3	Gold—10 and 20 franc pieces; silver—5 francs.
Brazil	Gold	Milreis	.54,6	Gold—5, 10, and 20 milreis; silver—½, 1, and 2 milreis.
British North America (except Newfoundland).	do	Dollar	1.00	
British Honduras	do	do	1.00	
Chile	do	Peso	.36,5	Gold—escudo ($1.25), doubloon ($3.65), and condor ($7.30); silver—peso and divisions.
Costa Rica	do	Colon	.46,5	Gold—2, 5, 10, and 20 colons; silver—5, 10, 25, and 50 centisimos.
Cuba	Gold and silver	Peso	.92,6	Gold—doubloon ($5.01,7); silver—peso (60 cents).
Denmark	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Ecuador †	do	Sucre	.48,7	Gold—10 sucres ($4.8665); silver—sucre and divisions.
Egypt	do	Pound (100 piasters).	4.94,3	Gold—10, 20, 50, and 100 piasters; silver—1, 2, 10, and 20 piasters.
Finland	do	Mark	.19,3	Gold—10 and 20 marks ($1.93 and $3.85,9).
France	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany	Gold	Mark	.23,8	Gold—5, 10, and 20 marks.
Great Britain	do	Pound sterling	4.86,6½	Gold—sovereign (pound sterling) and half sovereign.
Greece	Gold and silver	Drachma	.19,3	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti	do	Gourde	.96,5	Silver—gourde.
India ‡	Gold	Rupee	.32,4	Gold—sovereign ($4.8665); silver—rupee and divisions.
Italy	Gold and silver	Lira	.19,3	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Japan §	Gold	Yen	.49,8	Gold—1, 2, 5, 10, and 20 yen.
Liberia	do	Dollar	1.00	
Netherlands	Gold and silver	Florin	.40,2	Gold—10 florins; silver—½, 1, and 2½ florins.
Newfoundland	Gold	Dollar	1.01,4	Gold—$2 ($2.02,7).
Peru ‖	do	Sol	.48,7	Gold—libra ($4.8665); silver—sol and divisions.
Portugal	do	Milreis	1.08	Gold—1, 2, 5, and 10 milreis.
Russia ¶	do	Ruble	.51,5	Gold—imperial ($7.718) and ½ imperial ($3.80); silver—¼, ½, and 1 ruble.
Spain	Gold and silver	Peseta	.19,3	Gold—25 pesetas; silver—5 pesetas.
Sweden and Norway	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Switzerland	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey	Gold	Piaster	.04,4	Gold—25, 50, 100, 200, and 500 piasters.
Uruguay	do	Peso	1.03,4	Gold—peso; silver—peso and divisions.
Venezuela	Gold and silver	Bolivar	.19,3	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

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* The gold standard went into effect January 1, 1900 (see Commercial Relations, 1899, Vol. II, p. 7). Values are still sometimes expressed in the florin, which is worth 2 crowns.

† Gold standard adopted in November, 1900. (See CONSULAR REPORTS No. 225, June, 1899.)

‡ For an account of the adoption of the gold standard, see CONSULAR REPORTS No. 238, p. 359.

§ Gold standard adopted October 1, 1897. (See CONSULAR REPORTS No. 201, p. 259.)

‖ Gold standard adopted October 13, 1900.

¶ For an account of the adoption of the gold standard, see Review of the World's Commerce, 1896–97, p. 254.

B.—*Countries with fluctuating currencies, 1874–1898.*

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1874.	1878.	1883.	1888.	1889.	1890.
Austria-Hungary*.	Silver	Florin.............	$0.47,6	$0.45,3	$0.40,1	$0.34,5	$0.33,6	$0.42
Bolivia	.........do	Dollar until 1880; boliviano thereafter.	.96,5	.96,5	.81,2	.69,9	.68	.85
Central America......	.........do	Peso	.96,5	.91,8	....	.69,9	.68	.85
China	.........do	Haikwan tael..	1.61	....	....	....	....	....
Colombia	.........do	Peso	.96,5	.96,5	.81,2	.69,9	.68	.85
Ecuador.................	.........do	.........do.............	.96,5	.91,8	.81,2	.69,9	.68	.85
Egypt†.....................	Gold	Pound (100 piasters).	....	4.97,4	4.90	4.94,3	....	....
India	Silver	Rupee.............	.45,8	.43,6	.38,6	.32,2	.32,3	.40,4
Japan	Gold.........	Yen..............	.99,7	.99,7	....	.99,7	.99,7	.99,7
	Silver		....	....	.87,6	.75,3	.73,4	.91,7
Mexico	.........do.........	Dollar	1.04,75	.99,8	.88,2	.75,9	.73,9	.92,3
Netherlands‡.........	Gold and silver.	Florin.............	.40,5	.38,5	....	....	....	....
Peru........................	Silver	Sol	.92,5	.91,8	.81,2	.69,9	.68	.85
Russia.....................	.........do	Ruble.............	.77,17	.73,4	.65	.55,9	.54,4	.68
Tripoli	.........do	Mahbub of 20 piasters.	.87,09	.82,9	.73,3	.63	.61,4	.76,7

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1891.	1892.	1893.	1894.	1896.	1898.
Austria-Hungary*.	Silver	Florin.............	$0.38,1	$0.34,1	....	....	....	....
Bolivia	.........do	Boliviano	.77,1	.69,1	$0.61,3	$0.51,6	$0.49,1	$0.42,4
Central America......	.........do	Peso	.77,1	.69,1	.61,3	.51,6	.49,1	.41,4
Colombia	.........do	.........do.............	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
Ecuador.................	.........do	.........do.............	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
India	.........do	Rupee.............	.36,6	.32,8	.29,2	.24,5	.23,3	.20,1
Japan§	.........do	Yen.................	.83,1	.74,5	.66,1	.55,6	.52,9	....
Mexico	.........do	Dollar	.83,7	.75	.66,6	.56	.53,3	.46
Peru........................	.........do	Sol..................	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
Russia§..................	.........do	Ruble.............	.61,7	.55,3	.49,1	.41,3	.39,3	....
Tripoli	.........do	Mahbub of 20 piasters.	.69,5	.62,3	.55,3	.46,5	.44,3	....

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* See footnote to Austria-Hungary under Table A.

† The Egyptian pound became fixed in value at $4.94,3 in 1887.

‡ The Netherlands florin fluctuated up to the year 1880, when it became fixed at 40.2 cents.

§ See footnote, table of fixed currencies.

C.—*Quarterly valuations of fluctuating currencies.*

Countries.	Monetary unit.	1900.				1901.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia	Silver boliviano.	$0.42,7	$0.43,6	$0.43,8	$0.45,1	$0.46,8	$0.45,1	$0.43,6	$0.42,8
Central America.	Silver peso	.42,7	.43,6	.43,8	.45,1	.46,5	.45,1	.43,6	.42,8
China	Amoy tael	.69,1	.70,5	.70,9	.72,9	.75,7	.72,9	.70,5	.69,1
	Canton tael	.68,9	.70,3	.70,7	.72,7	.75,5	.72,7	.70,3	.68,9
	Chefoo tael	.66,1	.67,4	.67,8	.69,7	.72,4	.69,7	.67,4	.66,1
	Chinkiang tael	.67,5	.68,8	.69,3	.71,2	.74	.71,2	.68,8	.67,5
	Fuchau tael	.64	.65,2	.65,6	.67,4	.70,1	.67,5	.65,2	.64
	Haikwan tael	.70,3	.71,7	.72,1	.74,2	.77,1	.74,2	.71,7	.70,4
	Hankau tael	.64,7	.65,9	.66,3	.68,2	.70,9	.68,2	.65,9	.64,7
	Hongkong tael	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)
	Ningpo tael	.66,5	.67,7	.68,2	.70,1	.72,8	.70,1	.67,8	.66,5
	Niuchwang tael.	.64,8	.66,1	.66,5	.68,4	.71	.68,4	.66,1	.64,8
	Shanghai tael	.63,1	.64,4	.64,8	.66,6	.69,2	.66,6	.64,4	.63,2
	Swatow tael	.63,9	.65,1	.65,5	.67,4	.70	.67,4	.65,1	.63,9
	Takao tael	.69,6	.70,9	.71,4	.73,4	.76,2	.73,4	.70,9	.69,6
	Tientsin tael	.67	.68,3	.68,7	.70,7	.73,4	.70,7	.68,3	.67
Colombia	Silver peso	.42,7	.43,6	.43,8	.45,1	.46,8	.45,1	.43,6	.42,8
Ecuador †	do	....	....	....	....	....	....	....	....
India	Silver rupee‡	.20,3	.20,7	.20,8	....	....	....	....	....
Mexico	Silver dollar	.46,4	.47,3	.47,6	.49	.50,9	.49	.49	.46,4
Persia	Silver kran	.07,9	.08	.08,1	.08,3	.08,6	.08,3	.08,3	.07,9
Peru †	Silver sol	.42,7	.43,6	.43,8	.48,7	....	....	....	....

Countries.	Monetary unit.	1902.				1903.		
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.
Bolivia	Silver boliviano.	$0.41,3	$0.40,3	$0.38,2	$0.38,4	$0.36,1	$0.35,2	$0.38,4
Central America	Silver peso	.41,3	.40,3	.38,2	.38,4	.36,1	.35,2	.38,4
China	Amoy tael	.66,9	.65,1	.61,8	.62	.58,4	.57	.62,2
	Canton tael	.66,7	.64,9	.61,7	.61,9	.58,2	.56,8	.62
	Chefoo tael	.63,9	.62,3	.59,1	.59,3	.55.8	.54,5	.59,5
	Chinkiang tael	.65,3	.63,6	.60,4	.60,6	.57	.55,7	.60,7
	Fuchau tael	.61,8	.60,2	.57,2	.57,4	.54	.52,7	.57,5
	Haikwan tael	.68	.66,3	.62,9	.63,1	.59,4	.58	.63.3
	Hankau tael	.62,6	.60,9	.57,9	.58	.54,6	.53,3	.58,2
	Hongkong tael	(*)	(*)	(*)	(*)	(*)	(*)	(*)
	Ningpo tael	.64,3	.62,6	.59,5	.59,6	.56,1	.54,8	.58,3
	Niuchwang tael.	.62,7	.61,1	.58	.58,2	.53,3	.53,4	.59.8
	Shanghai tael	.61,1	.59,5	.56,5	.56,7	.53,9	.52	.56,8
	Swatow tael	.61,8	.60,2	.57,1	.57,3	.58,8	.52,6	.57,5
	Takao tael	.67,3	.65,5	.62,2	.62,4	.56,6	.57,3	.62,6
	Tientsin tael	.64,8	.63,1	.59.9	.60,1	.60,1	.55,2	.60,3
Colombia	Silver peso	.41,3	.40,3	.38,2	.38,4	.36,1	.35,2	.38,4
Mexico	Silver dollar	.44,9	.43,7	.41,5	.41,7	.39,2	.38,3	.41,8
Persia	Silver kran	.07,6	.07,4	.07	.07,1	.06,6	.06,5	.07,1

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* The "British dollar" has the same legal value as the Mexican dollar in Hongkong, the Straits Settlements, and Labuan.

† See footnote, table of fixed currencies.

‡ The sovereign is the standard coin of India, but the rupee is the money of account. See also table of fixed currencies.

FOREIGN WEIGHTS AND MEASURES.

The following table embraces only such weights and measures as are given from time to time in CONSULAR REPORTS and in Commercial Relations:

Foreign weights and measures, with American equivalents.

Denominations.	Where used.	American equivalents.
Almude	Portugal	4.422 gallons.
Ardeb	Egypt	7.6907 bushels.
Are	Metric	0.02471 acre.
Arobe	Paraguay	25 pounds.
Arratel or libra	Portugal	1.011 pounds.
Arroba (dry)	Argentine Republic	25.3175 pounds.
Do	Brazil	32.38 pounds.
Do	Cuba	25.3664 pounds.
Do	Portugal	32.38 pounds.
Do	Spain	25.36 pounds.
Do	Venezuela	25.4024 pounds.
Arroba (liquid)	Cuba, Spain, and Venezuela	4.263 gallons.
Arshine	Russia	28 inches.
Arshine (square)	do	5.44 square feet.
Artel	Morocco	1.12 pounds.
Baril	Argentine Republic and Mexico	20.0787 gallons.
Barrel	Malta (customs)	11.4 gallons.
Do	Spain (raisins)	100 pounds.
Batman or tabriz	Persia	6.49 pounds.
Berkovets	Russia	361.12 pounds.
Bongkal	India	832 grains.
Bouw	Sumatra	7,096.5 square meters.
Bu	Japan	0.1 inch.
Butt (wine)	Spain	140 gallons.
Caffiso	Malta	5.4 gallons.
Candy	India (Bombay)	529 pounds.
Do	India (Madras)	500 pounds.
Cantar	Morocco	113 pounds.
Do	Syria (Damascus)	575 pounds.
Do	Turkey	124.7036 pounds.
Cantaro (cantar)	Malta	175 pounds.
Carga	Mexico and Salvador	300 pounds.
Catty	China	1.333⅓ (1⅓) pounds.
Do*	Japan	1.31 pounds.
Do	Java, Siam, and Malacca	1.35 pounds.
Do	Sumatra	2.12 pounds.
Centaro	Central America	4.2631 gallons.
Centner	Bremen and Brunswick	117.5 pounds.
Do	Darmstadt	110.24 pounds.
Do	Denmark and Norway	110.11 pounds.
Do	Nuremberg	112.43 pounds.
Do	Prussia	113.44 pounds.
Do	Sweden	93.7 pounds.
Do	Vienna	123.5 pounds.
Do	Zollverein	110.24 pounds.
Do	Double or metric	220.46 pounds.
Chetvert	Russia	5.7748 bushels.
Chih	China	14 inches.

*More frequently called "kin." Among merchants in the treaty ports it equals 1.33⅓ pounds avoirdupois.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Coyan	Sarawak	3,098 pounds.
Do	Siam (Koyan)	2,667 pounds.
Cuadra	Argentine Republic	4.2 acres.
Do	Paraguay	78.9 yards.
Do	Paraguay (square)	8.077 square feet.
Do	Uruguay	Nearly 2 acres.
Cubic meter	Metric	35.3 cubic feet.
Cwt. (hundredweight)	British	112 pounds.
Dessiatine	Russia	2.6997 acres.
Do	Spain	1.599 bushels.
Drachme	Greece	Half ounce.
Egyptian weights and measures	(*See* CONSULAR REPORTS No. 144.)	
Fanega (dry)	Central America	1.5745 bushels.
Do	Chile	2.575 bushels.
Do	Cuba	1.599 bushels.
Do	Mexico	1.54728 bushels.
Do	Morocco	Strike fanega, 70 pounds; full fanega, 118 pounds.
Do	Uruguay (double)	7.776 bushels.
Do	Uruguay (single)	3.888 bushels.
Do	Venezuela	1.599 bushels.
Fanega (liquid)	Spain	16 gallons.
Feddan	Egypt	1.03 acres.
Frail (raisins)	Spain	50 pounds.
Frasco	Argentine Republic	2.5096 quarts.
Do	Mexico	2.5 quarts.
Frasila	Zanzibar	35 pounds.
Fuder	Luxemburg	264.17 gallons.
Funt	Russia	0.9028 pound.
Garnice	Russian Poland	0.88 gallon.
Gram	Metric	15.432 grains.
Hectare	do	2.471 acres.
Hectoliter:		
Dry	do	2.838 bushels.
Liquid	do	26.417 gallons.
Joch	Austria-Hungary	1.422 acres.
Ken	Japan	6 feet.
Kilogram (kilo)	Metric	2.2046 pounds.
Kilometer	do	0.621376 mile.
Klafter	Russia	216 cubic feet.
Koku	Japan	4.9629 bushels.
Korree	Russia	3.5 bushels.
Kwan	Japan	8.28 pounds.
Last	Belgium and Holland	85.134 bushels.
Do	England (dry malt)	82.52 bushels.
Do	Germany	2 metric tons (4,480 pounds).
Do	Prussia	112.29 bushels.
Do	Russian Poland	11⅜ bushels.
Do	Spain (salt)	4,760 pounds.
League (land)	Paraguay	4,633 acres.
Li	China	2,115 feet.
Libra (pound)	Argentine Republic	1.0127 pounds.
Do	Central America	1.043 pounds.
Do	Chile	1.014 pounds.
Do	Cuba	1.0161 pounds.
Do	Mexico	1.01465 pounds.
Do	Peru	1.0143 pounds.
Do	Portugal	1.011 pounds.
Do	Spain	1.0144 pounds.
Do	Uruguay	1.0143 pounds.
Do	Venezuela	1.0161 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Liter	Metric	1.0567 quarts.
Livre (pound)	Greece	1.1 pounds.
Do	Guiana	1.0791 pounds.
Load	England (timber)	Square, 50 cubic feet; unhewn, 40 cubic feet; inch planks, 600 superficial feet.
Manzana	Costa Rica	1¾ acres.
Do	Nicaragua and Salvador	1.727 acres.
Marc	Bolivia	0.507 pound.
Maund	India	82 2/7 pounds.
Meter	Metric	39.37 inches.
Mil	Denmark	4.68 miles.
Do	Denmark, (geographical)	4.61 miles.
Milla	Nicaragua and Honduras	1.1493 miles.
Morgen	Prussia	0.63 acre.
Oke	Egypt	2.7225 pounds.
Do	Greece	2.84 pounds.
Do	Hungary	3.0817 pounds.
Do	Turkey	2.82838 pounds.
Do	Hungary and Wallachia	2.5 pints.
Pic	Egypt	21¼ inches.
Picul	Borneo and Celebes	135.64 pounds.
Do	China, Japan, and Sumatra	133⅓ pounds
Do	Java	135.1 pounds.
Do	Philippine Islands.	137.9 pounds.
Pie	Argentine Republic	0.9478 foot.
Do	Spain	0.91407 foot.
Pik	Turkey	27.9 inches.
Pood	Russia	36.112 pounds.
Pund (pound)	Denmark and Sweden	1.102 pounds.
Quarter	Great Britain	8.252 bushels.
Do	London (coal)	36 bushels.
Quintal	Argentine Republic	101.42 pounds.
Do	Brazil	130.06 pounds.
Do	Castile,* Chile, Mexico, and Peru	101.41 pounds.
Do	Greece	123.2 pounds.
Do	Newfoundland (fish)	112 pounds.
Do	Paraguay	100 pounds.
Do	Syria	125 pounds.
Do	Metric	220.46 pounds.
Rottle	Palestine	6 pounds.
Do	Syria	5¾ pounds.
Sagene	Russia	7 feet.
Salm	Malta	490 pounds.
Se	Japan	0.02451 acres.
Seer	India	1 pound 13 ounces.
Shaku	Japan	11.9305 inches.
Sho	do	1.6 quarts.
Standard (St. Petersburg)	Lumber measure	165 cubic feet.
Stone	British	14 pounds.
Suerte	Uruguay	2,700 cuadras (see cuadra).
Sun	Japan	1.193 inches.
Tael	Cochin China	590.75 grains (troy).
Tan	Japan	0.25 acre.
To	do	2 pecks.
Ton	Space measure	40 cubic feet.
Tonde (cereals)	Denmark	3.94783 bushels.
Tondeland	do	1.36 acres.

*Although the metric weights are used officially in Spain, the Castile quintal is employed in commerce in the Peninsula and colonies, save in Catalonia; the Catalan quintal equals 91.71 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Tsubo	Japan	6 feet square.
Tsun	China	1.41 inches.
Tunna	Sweden	4.5 bushels.
Tunnland	Sweden	1.22 acres.
Vara	Argentine Republic	34.1208 inches.
Do	Central America	32.87 inches.
Do	Chile and Peru	33.367 inches.
Do	Cuba	33.384 inches.
Do	Curaçao	33.375 inches.
Do	Mexico	33 inches.
Do	Paraguay	34 inches.
Do	Spain	0.914117 yard.
Do	Venezuela	33.384 inches.
Vedro	Russia	2.707 gallons.
Vergees	Isle of Jersey	71.1 square rods.
Verst	Russia	0.663 mile.
Vlocka	Russian Poland	41.98 acres.

METRIC WEIGHTS AND MEASURES.

Metric weights.

Milligram ($\frac{1}{1000}$ gram) equals 0.0154 grain.
Centigram ($\frac{1}{100}$ gram) equals 0.1543 grain.
Decigram ($\frac{1}{10}$ gram) equals 1.5432 grains.
Gram equals 15.432 grains.
Decagram (10 grams) equals 0.3527 ounce.
Hectogram (100 grams) equals 3.5274 ounces.
Kilogram (1,000 grams) equals 2.2046 pounds.
Myriagram (10,000 grams) equals 22.046 pounds.
Quintal (100,000 grams) equals 220.46 pounds.
Millier or tonnea—ton (1,000,000 grams) equals 2,204.6 pounds.

Metric dry measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.061 cubic inch.
Centiliter ($\frac{1}{100}$ liter) equals 0.6102 cubic inch.
Deciliter ($\frac{1}{10}$ liter) equals 6.1022 cubic inches.
Liter equals 0.908 quart.
Decaliter (10 liters) equals 9.08 quarts.
Hectoliter (100 liters) equals 2.838 bushels.
Kiloliter (1,000 liters) equals 1.308 cubic yards.

Metric liquid measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.0338 fluid ounce.
Centiliter ($\frac{1}{100}$ liter) equals 0.338 fluid ounce.
Deciliter ($\frac{1}{10}$ liter) equals 0.845 gill.
Liter equals 1.0567 quarts.
Decaliter (10 liters) equals 2.6418 gallons.
Hectoliter (100 liters) equals 26.417 gallons.
Kiloliter (1,000 liters) equals 264.18 gallons.

Metric measures of length.

Millimeter ($\frac{1}{1000}$ meter) equals 0.0394 inch.
Centimeter ($\frac{1}{100}$ meter) equals 0.3937 inch.
Decimeter ($\frac{1}{10}$ meter) equals 3.937 inches.
Meter equals 39.37 inches.
Decameter (10 meters) equals 393.7 inches.
Hectometer (100 meters) equals 328 feet 1 inch.
Kilometer (1,000 meters) equals 0.62137 mile (3,280 feet 10 inches).
Myriameter (10,000 meters) equals 6.2137 miles.

Metric surface measures.

Centare (1 square meter) equals 1,550 square inches.
Are (100 square meters) equals 119.6 square yards.
Hectare (10,000 square meters) equals 2.471 acres.

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THE BUILDING OF DALNY.

Since the excellent article on Dalny by Mr. Henry B. Miller, United States consul at Niuchwang, of September 29, 1901, which appeared in CONSULAR REPORTS No. 260 (May, 1902), giving the interesting details of the beginning of the "Russian commercial seaport," the enormous work of building the foundation of a great commercial city has been continued by the engineers of the Chinese Eastern Railway Company, which spares neither expense nor labor in the development of this vast enterprise.

TOWNSHIP OF DALNY.

The township of Dalny comprises an area of 75 square versts (21,000 acres), and during the current year it is proposed to purchase an additional tract of 25 square versts (7,000 acres) on the northwest of the township.

The lands forming the township of Dalny were purchased in 1899 by the Chinese Eastern Railway Company from the local inhabitants at a price fixed by a committee of appraisers. On these grounds were formerly several small Chinese villages, the inhabitants of which were principally devoted to agriculture and fishing.

CITY OF DALNY.

The city of Dalny is picturesquely situated in an extensive valley which slopes gently down to the deep and well protected bay of Talienwan and is surrounded on three sides by a range of hills rising to a height of 800 feet. It is divided into three parts—the Administration City, the European and Commercial City, and the Chinese City.

Administration City.—The Administration City borders on the harbor and bay and is 108 acres in extent. All space in the administration quarter is reserved for the use of the Chinese Eastern Railway Company and its officials. In this section are the residences and offices of the governor and other officials of the railway company. There are over 200 buildings erected, besides a large area of temporary structures for minor employees and workmen.

Among the principal buildings are 112 handsome brick and stone residences, the Administration Building, the port office, the seagoing-service office, the railway office, the Greek church and school buildings, the railway company's hospital (for 186 patients), the post, telegraph, and telephone offices, the Service Club and Concert Hall, the Yacht Club, Hotel Dalny, the Russo-Chinese Bank, police office and jail, the electric plant, machine shops, and the principal stores and shops.

The city is supplied with water and electric lights throughout, and has an adequate police force and fire brigade, which extend also to the Commercial City.

The permanent buildings of Dalny are at present confined almost entirely to the administration quarter.

European and Commercial City.—The European and Commercial City, which has an area of 1,100 acres, borders on the harbor and extends to the range of hills on the south and east.

Along many of the principal avenues and streets of the Commercial City a large number of shops, stores, hotels, and dwelling houses have been built for the accommodation of both the large native population and foreigners. Most of these buildings, however, are only temporary. They are put up on the company's land with permission of the city authorities, and are to be removed in case the lots upon which they are built are sold or leased.

The most central part of the Commercial City is Nicolas place, from which ten avenues branch. Around this circle (which is 700 feet in diameter) it is intended that the public buildings, banks, hotels, and office buildings shall be erected. Nicolas place is connected with the piers and shipping quarter by Moscow avenue, which is to be the main business thoroughfare of the city.

The residential section is to be on the elevated ground of the European City.

Chinese City.—The Chinese quarter is separated from the Administration and European cities by the town park and nurseries, which are upon the site of an old Chinese village.

Climate of Dalny.

The climate of Dalny is agreeable, healthy, and dry. According to the weather bureau of Dalny, the temperature in winter for the last four years has not been below 19° C. (3.° F. below zero). During very severe winters the bay becomes frozen, but ice breakers are to keep the channel and harbor open for navigation.

Administration.

The rules governing the building and administration of the township of Dalny are prescribed in the "temporary regulations governing the administration of the Kwangtung district," which were approved by the Emperor of Russia on August 16, 1899:

> The city of Dalny is to be built by the Chinese Eastern Railway Company under the direction of the Russian Minister of Finance.
>
> The city of Dalny is limited to the land purchased by the Chinese Eastern Railway Company, and is to form a separate township under the control of the Russian Minister of Finance.
>
> The governor of Dalny and his assistants are subordinated to the commander in-chief of the military and naval forces of the Kwangtung district.

From 1899 to the beginning of 1902 the entire population of Dalny was composed of the employees and workmen of the Chinese Eastern Railway Company, and the functions of government were performed by a police justice. In 1902, owing to the growth of the city, the necessity for a higher executive officer was felt, and by an imperial edict of May 17, 1902, Mr. V. Sakharof, formerly chief engineer of the port, was appointed governor of the township.

The administration of Dalny is now vested in a town council, of which the governor is chairman. The town council is composed of six regular members and three substitutes. Three of the members must be Russian citizens and one appointed by the Chinese Eastern Railway Company. The rights and powers of the town council and the rules governing the election of members thereof are prescribed in the "temporary regulations governing the administration of the Kwangtung district."

Sale of lots.

Lots within the limits of the township of Dalny, with the exception of the administration quarter and sites reserved for public grounds and buildings, are to be sold or leased at public auction, according to the rules approved by the Russian Minister of Finance. Both Russian subjects and foreigners have the privilege of buying or leasing lots. In the case of foreigners, the principles of reciprocation are observed according to existing treaties.

The lots are divided into four classes, according to their value, each class having a reserve or starting price, approved by the Minister of Finance. Not later than three years after receiving the certificate of sale or lease of lots, the owner or lessee must fulfill the conditions of the certificate relating to the erection of buildings upon the lots acquired.

The minimum expenditure upon buildings on lots, bought or leased, per square sagene (49 square feet) is:

Class.	Value.	
	Rubles.	
First	15	$7.72
Second	12	6.16
Third	9	4.63
Fourth	6	3.09

The first sale of lots in Dalny was on November 1, 1902, when 49 lots in the civil part of the Commercial City were sold. Twenty-five Russians and six Chinese were the purchasers. The area sold and the prices obtained were as follows:

Class.	Number of lots.	Total area.	Price.	Average price per square foot.
		Sq. feet.		*Cents.*
First	16	267,639	$95,733	35
Second	33	557,699	123,234	22

On March 1, 1903, 24 lots in the Chinese quarter were sold, the starting price being 10 rubles ($5.15) per square sagene (11 cents per square foot).

Great interest is attached to the result of the coming sale, which will be on May 15, 1903, when 40 lots in the principal business section of the Commercial City will be sold.

Population.

The population of Dalny, on January 1, 1903, according to the official census, was 41,260, divided as follows:

Nationality.	Men.	Women.	Children.	Total.
Russian	1,894	672	543	3,113
Foreign	68	9	3	80
Japanese and Koreans	257	37	13	307
Chinese:				
In the city	24,010	1,860	569	26,439
In the township	5,678	2,754	2,889	11,321
Total	31,907	5,332	4,021	41,260

Industries.

Among the principal industries now established in Dalny are:

The smaller dry dock, which was completed in the summer of 1902 and has since been in constant use. This dry dock is 380 feet long, 50 feet wide, and 18 feet deep, and with its electric pumps can be emptied in less than two hours.

In connection with the dry dock are the harbor repair shops, with a foundry, smithy, machine and fitting shop, boiler shop, etc. These shops, which are electrically driven and lighted, are fully equipped for the handling of repair jobs. Ship repairs are being continually executed, and castings up to 2½ tons have been made and machined. In another six months the newly erected machine shops will be fitted out for doing all classes of steamship, railway-engine, and car repairs.

The electric light and power station, which is considered the finest electric plant east of Singapore, was finished over a year ago. This plant, which is a model in every detail, is fitted with three of Ganz & Co.'s (Budapest) generators, with a total of 1,000 horsepower, and has a reserve space for additional machines to double its present capacity when required.

The cast-iron foundry, which is on the seaboard near the Chinese City, has a production of 150 tons a month, principally water pipes for the city mains and for shipment to the interior of the province, and general castings.

The city workshops, for making and repairing tools, tram cars, and other implements used in the construction of the city.

The furniture shops and steam drying mills; the concrete block factory, where the stone and cement blocks which are used for the foundations of the piers and sea walls are made; the brickyards, tile factory, and lime kilns, which produce the greater part of such materials as is used in the city, and a small gas works for supplying the gas buoys in the harbor.

Building the city.

In the construction of the city thousands of Chinese laborers are daily engaged in the enormous excavations, the making of streets and roads, and the completion of the work on the harbor. Numerous steam and tram lines are used for the conveying of earth and stone and for filling in the piers and water front.

The harbor is the scene of the greatest activity at present. The small harbor has been dredged to a depth of 18 feet, and the pier for coast steamers (which has been in use for over a year) is nearly completed and has a railroad to its end.

The work on the large dry dock is progressing rapidly; the cofferdam is built and the excavation well under way. This dry dock is to be 630 feet long, 88 feet wide, and 28 feet in depth, and will cost about 1,800,000 rubles ($927,000).

The eastern side of the large pier for ocean steamers is completed and in use nearly to its end; on the west side the walls are nearing completion, and one of the iron wharves for light-draft vessels is built. Three railway tracks connecting with the main line and two storage warehouses, with a floor area of 19,600 square feet each, are completed. This pier is 1,925 feet long and 350 feet wide, and has a depth of water of from 18 to 28 feet, and when completed will contain seven railway tracks and nine large warehouses.

One can judge from this splendid pier how thoroughly and substantially the construction of the harbor is being done. The foundation is laid with 50-ton concrete blocks and the walls finished with the best of dressed granite.

For the outside pier, the foundation only is laid. The wharf between the two piers is completed and in use. The foundation of the breakwater is finished for a distance of 2,800 feet and the sea wall along St. Petersburg quay is built.

Work accomplished.

Area of port territory filled in	square yards	6, 800, 000
Dredged from harbor	cubic yards	3, 166, 000
Earth excavated	do	12, 916, 000
Stone brought by rail	do	375, 412
Stone brought by sea	do	882, 210
Length of streets made	yards	77, 000
Streets macadamized	do	20, 300
Sidewalks made	miles	6
Suburban roads made	do	14

Railway service.

The branch railway connecting Dalny with the main line of the Chinese Eastern Railway at Nangalin was built and formally operated by the engineers in charge of the construction of Dalny. At the beginning of the current year this branch road was given over to the control of the main line, and Dalny was connected by daily service of through trains with Port Arthur, Harbin, and Manchuria. Prior to this, the Manchurian trains did not come to Dalny, passengers and freight being transferred at Nangalin. Besides the Manchurian service, there are now two daily trains between Dalny and Port Arthur and two weekly express trains between Dalny, Moscow, and St. Petersburg.

On February 21, 1903, the first passenger express train from St. Petersburg and Moscow arrived at Dalny, and the weekly Trans-Siberian express service was inaugurated. The demand for passages on this quick and comfortable route became so great that another train was soon added.

The Trans-Siberian express leaves Dalny on Tuesdays and Saturdays, making the trip to Moscow—a distance of 5,375 miles—with a change of cars at Manchuria Station and Baikal, in thirteen and one-half days. The "train de luxe" is a solid vestibuled train, composed of coaches of the International Sleeping Car and Express Train Company, having first and second class compartment sleeping cars and dining car. The fare from Dalny to St. Petersburg is as follows:

Class.	Fare.	
	Rubles.	
First	267.90	$137.96
Second	178.60	91.97

Steamship service.

In November, 1902, the head office of the seagoing service of the Chinese Eastern Railway Company was transferred from Port Arthur to Dalny. The mercantile fleet of the seagoing service consists of 19 steamers, having a total net tonnage of 20,205 tons. These steamers are for the coast trade, but as yet all are not running on schedule time.

Of the company's ships there are, in addition to the express steamers to Shanghai and to Nagasaki, four steamers a week between Dalny, Port Arthur, and Chefoo; a fortnightly service between Dalny, Port Arthur, Chemulpo, and Shanghai; a direct line between Dalny and Hankau during the tea season; and occasional steamers bringing coal from Japan. With the exception of chartered vessels, none of the ships of the other coast lines call regularly at Dalny.

In conjunction with the Trans-Siberian express trains, there is a weekly service between Dalny and Shanghai and Dalny and Nagasaki by the company's new express steamers *Manchuria* and *Mongolia*, which are equal in speed and comfort to the steamers of the mail lines and make their trips to Shanghai and Nagasaki in thirty-six hours.

The schedule for these express steamers is arranged by the head office of the Chinese Eastern Railway Company at St. Petersburg to connect western Europe with Shanghai and Nagasaki in the shortest possible time. The trip from Shanghai or Nagasaki via Dalny and the Trans-Siberian Railway system to London or Paris is now made in about eighteen days. Upon the completion of the railway around Lake Baikal (which is expected in a few months) the trip from Dalny to Moscow will be made without change of cars. Faster trains will then be run, and, it is stated by railway officials, the time reduced two or three days.

Trade of Dalny.

The total trade of Dalny for the year 1902, according to the statistics of the Chinese Eastern Railway Company, was:

Imports.—By steamers, $2,480,305; by junks, $333,511—total, $2,813,816; by rail (value not given), 9,937,368 pounds.

Exports.—By steamers and junks, $120,125.29; by rail (value not given), 47,662,092 pounds.

Imports by articles.—The principle imports were as follows:

Article.	Value.	Article.	Value.
Coal (49,023 tons)	$216,839.72	Groceries	$72,541.87
Cement (112,750 barrels)	329,334.77	Beer	18,238.21
Timber	167,763.82	Hay and straw	11,960.12
Kerosene	33,929.75	Cattle	58,402.00
Flour	88,110.83	Granite and stone	31,795.07
Rice	39,705.99	Tea (in transit)	545,853.65
Manufactured goods	47,922.81		

Source of imports.—Of the imports, coal for the port and the southern division of the railroad is supplied by Japan. But little of the "Kai-ping" coal, from the Tungshan district, is used, and the Manchurian mines do not at present produce coal in sufficient quantities for the use of the railroad.

The cement is almost entirely Russian, being shipped by sea from Odessa and the Baltic ports. Most of the kerosene oil is also Russian.

The timber comes from the Yalu district, North Korea, and, in fair quantities, from Oregon.

American flour now controls this market, but the new Russian mills at Harbin are producing an excellent grade of flour, which may soon become a strong competitor for supremacy.

The manufactured goods and provisions are principally from Shanghai and other trade centers of the East.

Exports and reexports.—The diminutive exports from Dalny by steamers and junks might be classified as reexports. The native produce of Manchuria does not as yet find its way out through Dalny.

Among the exports by rail, cement and tea are by far the most prominent. Of the former, about 80,000 barrels were reshipped for use along the Manchurian Railway system. Tea is the only article which is being shipped through by the Trans-Siberian Railway in any quantities. According to the railway statistics, tea to the extent of 7,000,000 pounds was reexported in 1902. It is expected that a much larger portion of the tea destined for the European markets will pass through Dalny during the coming season.

The transit trade of Dalny will increase with greater railway accommodations and cheaper freight. At present few but the tea merchants can afford to ship their goods over the Manchurian and Siberian roads. It is predicted that Dalny will soon become the "Southampton of the East"—the great mail and passenger station.

Port Arthur, where many of the principal commercial firms of the Orient are established, is the business center of the Kwangtung Peninsula. In Dalny are agents for the American Trading Company, the East Asiatic Trading Company, Kunst & Albers, and Ginsburg & Co., all well-known firms in Port Arthur and elsewhere, but the business of the city is almost entirely retail, the dealers being supplied chiefly by the large houses in Port Arthur and Shanghai.

The commerce of Dalny may be said to begin in the present year, and with its railway and steamship connections, the excellent facilities for handling and reshipping cargoes, the low harbor dues, and the present absence of all customs duties, the trade report of Dalny for 1903 may be expected to show an increase in commerce which a port of its exceptional advantages demands.

ACKNOWLEDGMENT.

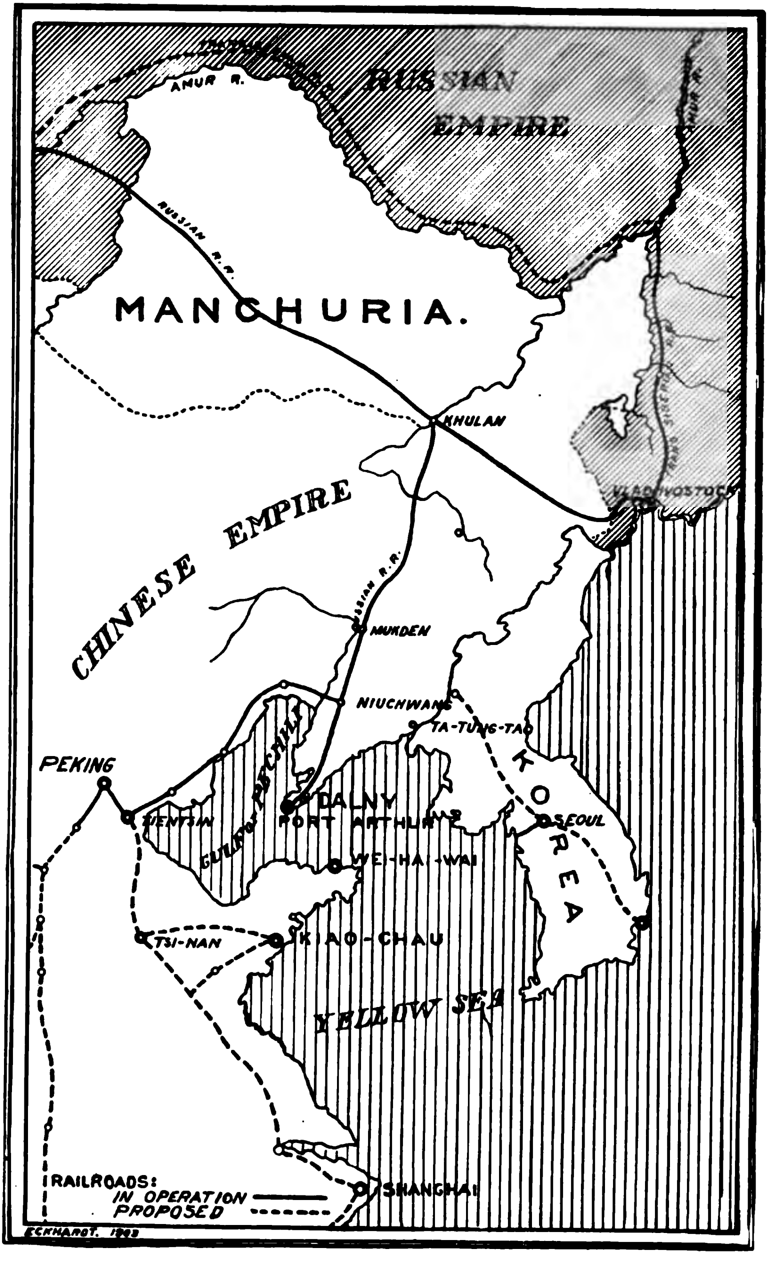
I wish to express my thanks to the governor of Dalny and his staff for their courtesy in supplying such figures and statistics as are used in this report.

M. M. LANGHORNE,
Commercial Agent.

DALNY, *April 30, 1903.*

Temporary port charges of Dalny.

Description.	Charge.	
Mooring alongside small wharf:	*Rubles.*	
First day	10.00	$5.15
For second and following days	7.50	3.86
Fresh water:		
From hydrant........per ton	.50	.26
From water boat........do	.70	.36
Lighters:		
Wooden lighter........per day	6.00	3.09
Steel lighter........do	20.00	10.30
Tug........per day of twelve hours	50.00	25.75
Floating crane........per hour	25.00	12.88
Examination of ship's bottom by diver	25.00	12.88
Coal, delivered on board........per ton	13.50	6.95
Tug for mooring vessel or towing into harbor	15.00	7.72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TA-TUNG-TAO
PEKING
TIENTSIN
GULF of PECHILI
DALNY
PORT ARTHUR
SEOUL
KOREA
WEI-HAI-WAI
TSI-NAN
KIAO-CHAU
YELLOW SEA
SHANGHAI
RAILROADS:
IN OPERATION
PROPOSED
ECKHARDT. 1903

LOCATION OF DALNY.

The accompanying map shows the location of Dalny, on the eastern shore of the Liaotung Peninsula, about 20 miles from Port Arthur and within the territory leased by the Chinese Government to Russia on March 27, 1898, the lease being for a term of twenty-five years, to be subsequently extended by mutual agreement. The lease included 800 square miles of territory and all harbors between Port Arthur and Talienwan, the harbor of Port Arthur and a part of Talienwan to be for the sole use of Russian and Chinese men-of-war, Russia to have the privilege of extending its Trans-Siberian Railroad through Manchuria to Port Arthur and Talienwan.

INDUSTRIAL SCHOOLS IN GERMANY.

There are 287 industrial schools in Saxony. The population of the Kingdom is 4,202,216, or one industrial school to every 14,641 people. The schools are divided into the following classes:

1. Advanced industrial schools (Höhere gewerbliche Schulen).
2. Special industrial schools (Gewerbliche Fachschulen).
3. Industrial schools for drawing and painting (Zeichen und Malschulen).
4. Industrial schools for women, girls, and children (Gewerbliche Lehranstalten für Frauen, Madchen, und Kinder).
5. Industrial primary or continuation schools (Gewerbliche Fortbildungsschulen).

ADVANCED INDUSTRIAL SCHOOLS.

There are 12 schools of this class in Saxony, located in the following cities:

Chemnitz.
Plauen.
Hainichen.
Dresden.
Mittweida.
Zwickau.
Leipzig.
Limbach.
Bautzen.

The following curriculum of the advanced industrial school in Chemnitz not only speaks for itself, but is a fair example by which to judge the others. It is divided into five distinct minor schools known as the industrial academy, architecture, machine construction, dyeing, and industrial drawing departments. The industrial academy furnishes four courses—namely, for mechanics, chemists, architects, and electricians. The conditions of admission demand of the student sufficient education to be in possession of the certificate which entitles him to one year's service in the army. In addition to this he must show evidence that he has passed two years in some factory, acquiring practical knowledge of the branch in which he desires to theoretically perfect himself in the industrial school. The course of study for mechanics is as follows:

Required.

German language and literature.
Architectural drawing.
Mathematics.
Surveying.
Chemistry.
Mechanics.
Machine drawing and sketching.
Free-hand drawirg.
Political economy.
Geometry.
Physics.
Metallurgy.
Machine architecture.
Machine construction.

Elective.

French.
Bookkeeping.
Weaving.
English.
Beer brewing.
Sanitary arrangements.
Arithmetic.
Spinning.

The courses in the other departments are similar to this one.

SPECIAL INDUSTRIAL SCHOOLS.

There are about 150 of these schools in Saxony which are training young men to become expert workmen in the following trades and industries:

Trade or industry.	Number of schools.	Trade or industry.	Number of schools.
Architects	11	Musicians	26
Barbers	14	Millers	1
Tinmen	3	Bead goods and dress trimmings	4
Brewers	1	Locksmiths	7
Printers	3	Tailors	17
Bookbinders	2	Chimney builders	1
Decorators	1	Instruction in penmanship, etc	4
Druggists	3	Shoemakers	3
Butchers	1	Toy makers	3
Waiters	3	Lace makers	2
Tanners	1	Paper hangers	1
Firemen	1	Watchmakers	1
Wood carvers	6	Weavers	23
Confectioners	1		
Painters and varnishers	3	Total	151

The following curriculum of the tin and metal industrial school in Aue, this consular district, is characteristic of what all these schools are:

Arithmetic.
Drawing.
Physics.
Bookkeeping.
Geometry.
Sketching.
Mechanics.
Correspondence.
German.
Modeling.
Chemistry.

The students devote twenty-eight hours each week to practical work in the tin and metal workshops of the school and factories of the city.

INDUSTRIAL SCHOOLS FOR DRAWING AND PAINTING.

There are 32 of these schools in Saxony, namely, 3 for painters in Dresden and 29 for industrial drawers, etc., in different cities in Saxony. Eighteen are connected with as many public schools throughout the country. The industrial drawing school in Eibenstock enjoys a good reputation. The sample exhibits of the school are exceptionally fine. The most exquisite designs in handmade lace curtains and bead and silk trimmings in ancient and modern fashions are so tastefully arranged that they can not fail in making a deep impression upon the apprentices, who see them almost daily.

INDUSTRIAL SCHOOLS FOR WOMEN, GIRLS, AND CHILDREN.

There are 21 of these schools in Saxony, namely, 19 for industrial education in general and 2 for lace making. One of the best schools of this class is in Schneeberg, this consular district.

INDUSTRIAL PRIMARY OR CONTINUATION SCHOOLS.

There are 44 of these schools in Saxony. They are intended to give boys and girls who have completed the public school course a chance to prepare themselves in a general way for some trade or particular branch of industry without the express intention of following the same.

In 1882 there were only 22 industrial schools in Saxony; to-day there are 287. This increase tells its own story.

ENGLISH VS. GERMAN INDUSTRIAL SCHOOLS.

In connection with the present school conflict in England, it is interesting to note that that country is closely watching the development of technical education in Germany. Only yesterday Lord Rosebery, in a letter to the board of directors appointed to carry out the plan of building a technical school in London similar to that in Berlin-Charlottenburg, gave prominence to the fact that ambitious young Englishmen desirous of obtaining a good technical education were obliged to attend the technical universities in America and Germany.* English industries suffered greatly in the past and were still suffering from the neglect to provide means for such training. The London Daily Mail, under date of June 22, contains an article about German industrial schools which I consider well worth inserting here:

> The marvelous expansion of German trade—one of the notable achievements of the nineteenth century—is often referred to as attributable wholly to the fostering effect of bounties. In real truth, many factors have combined to produce the remarkable result.
>
> It is, of course, impossible to locate with certainty the actual effects of any given

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*See "Technical high school in England," published in ADVANCE SHEETS No. 1701 (July 20, 1903).

cause, but there can be but little doubt that the growth of many immense industries is traceable to the system of education that has directed all the available powers of scientific knowledge and research upon industrial problems.

In Germany the university has in a measure been displaced from its position as crown of the educational edifice; or, rather, the classical foundations now share their supremacy with institutions of a more modern growth. The universities still maintain their old high rank as training schools in the humanities; but it is in the technical high schools that the keen business men with sound scientific knowledge are to-day receiving their training. Chemists and civil, mechanical, and mining engineers are receiving an educational training that brings them to the problems of business life with practical and technical knowledge. The love of research is joined to the power of initiation—to the qualities, in short, that go to the building up of new industries and the constant expansion of old ones.

The technical high schools are essentially modern institutions. They date back no farther than the nineteenth century, and their effectiveness is a matter of the last generation. Established as trade schools for the study of special subjects, they have widened their operations until they stand to-day for the application of scientific knowledge in all directions to the special requirements of commercial industry.

Of these technical high schools there are now 9 in existence—at Aix la Chapelle, Berlin, Brunswick, Darmstadt, Dresden, Hanover, Karlsruhe, Munich, and Stuttgart—while 2 more are being added at Breslau and Danzig. * * * In these schools there are being trained at the present time nearly 15,000 students, receiving an education directly fitting them for participation in great industrial concerns in the capacity most calculated to promote expansion and progress. Many facts combine to prove the general opinion of the completeness and value of this training. In a period of thirty years the number of technical-school students has been quadrupled. Out of a total of 15,000 students no less than one-sixth represent the youth of foreign nations *—a striking testimony to the excellence of the institutions.

The course of training in these schools is not only severe, but it follows upon a severe preliminary education. No student is admitted as fully qualified who has not passed through the complete nine-year course of the classical gymnasium or "real" school, in itself no mean accomplishment. In each of these cases a preliminary three-year course at a preparatory school has been taken, so that it would be impossible to enter the technical schools much before the age of 18 or 19, and, indeed, the age of admission is fixed at 18. In addition to the preliminary educational training, chemists are required to have worked for three years in an apothecary's establishment; architects must have completed a year of practical work at their profession; and engineering students must have passed the same period in mechanical work at some engineering factory. The usual course of training extends over a period of four years. Every conceivable branch of technical and practical science bearing upon the subject chosen comes within the range of study.

The requirements of the various schools as to attendance upon lectures are elastic and there is very little compulsion upon students. This is the more unnecessary because, in the main, those who elect to undergo the course of training are aware of its severity, and are willing to devote themselves to work and study. Discipline, therefore, is easily maintained, though there are provisions for punishment ranging from reprimand to imprisonment and expulsion. For the rest, the life and habits of the students are much the same as at the universities. The year of enforced military service is either taken before or during the high-school training.

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* In the spring of 1902, I wrote to the authorities of the different universities in Germany and ascertained that out of a total of 411 matriculated American students residing in Germany only 58 were attending the technical universities.

This serves to defer the age at which the education of the German youth is completed, and he has usually attained the age of 24 or 25 before quitting the schools.

The fees imposed at the technical high schools are extremely small. Although they vary, it is probable that the average annual expenditure for laboratory work, books, and examinations does not exceed $75. This, coupled with the fact that there are practically no endowments, entails a considerable charge upon the State both as a regular supplement to the yearly fees and for items for extraordinary expenditure such as the erection and equipment of buildings and laboratories and the provision for appliances.

This cost, however, is cheerfully borne, as indeed it may well be, seeing that there is no department of national expenditure which can be so directly traced in remunerative results. In one direction alone—in the vast chemical industries of Germany—may be witnessed an actual creation, not merely a diversion, of trade amounting to many millions annually. Perhaps in no other industry in the world can the intimate connection between applied scientific knowledge and the growth of industries be so completely demonstrated.

INDUSTRIAL SCHOOLS IN OTHER GERMAN STATES.

In connection with the industrial schools of Saxony, it is also interesting to note the progress made in this direction by other German states of the Empire.

In 1862 the city of Barmen sent a commission to Switzerland to study the industrial schools of that country. The results of this trip was the establishment of an industrial school in that city, with elementary and advanced departments. A pupil who desires to be admitted to the elementary class must be 12 years of age and able to read German fluently and perform ordinary examples in arithmetic. During the winter months practical work is carried on in laboratories and workshops.

The Crefeld industrial school for textiles is one of the best in Germany. The object of the school is to prepare young men by practical and theoretical instruction to become managers and manufacturers as well as thorough experts in the textiles produced in Crefeld. The subjects taught are bookkeeping, spinning, weaving, and drawing. The course lasts two years. The city donated the lot and $35,000 toward erecting the school building. In Spremburg, Guben, and Kottbus similar schools for the weaving industry were established many years ago.

In 1879 an industrial school was established in Iserlohn for the metal and bronze industry of that city and vicinity. The pupil receives theoretical instruction at school and actual practice in factory and workshops. When these workshops were organized in connection with the school, some fifteen manufacturers of Iserlohn consented to furnish the necessary raw materials free of charge for a period of five years. This donation in reality amounted to $2,500.*

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* The State furnished the needed machinery, at a cost of $4,000.

It is also arranged that young men permanently employed in the factories may take evening courses in drawing and in the theory of manufacture.

In Heinsberg there is an industrial school which teaches young apprentices how to make baskets and how to braid and twist materials for making baskets. There are three masters, each having about twenty-five boys in charge. In Hildesheim, Siegen, Breslau, Sulza, Höxter, Idstein, and a large number of other small towns industrial schools have been founded for building and architectural purposes. The best schools, however, in this line are in Berlin and Holzmünden. They are for the most part under the supervision of and receive subventions from the State.

The following information about the industrial school at Bochum speaks for itself:

> 1. The school has for its primary object the education of master workmen for the iron, smelting, and machine industries of the district.
>
> 2. The course of instruction includes three semesters. The first semester is intended to be a sort of preparatory course, while the two following are devoted to the higher branches of metallurgy and construction.
>
> 3. The conditions of admission require that the candidate shall have spent four full years in practical work in some one of the many iron foundries of the neighborhood. No examination is necessary, but a certificate from the foreman of the factory is necessary to show that this time—the four years—was actually spent in a factory and that the pupil's behavior was satisfactory. He must be able to read and write—in fact, a knowledge of the subjects taught in the ordinary public school is required of the candidate.
>
> 4. Instruction is given on four week days during the forenoon and on two week days during the afternoon, so that plenty of time is left for excursions to the factories.

The Prussian State railways have also established industrial schools in Elberfeld, Berlin, Königsberg, Frankfort-on-the-Oder, Potsdam, Halberstadt, Breslau, and many other cities, for the purpose of teaching apprentices every subject which has anything to do with the building or repairing of railway cars, etc. In every workshop connected with these schools there are 8 to 10 apprentices, so that the total number considerably exceeds 1,000. Each apprentice in these schools receives a remuneration of 20 cents a day, which is put out at interest until the end of the three years' apprenticeship, when he comes into possession of both principal and interest.

In Wurttemberg there are schools in Stuttgart, Pforzheim, and vicinity for jewelry, musical instruments, and weaving. Many of them have well-equipped libraries. Heidesheim has a weaver's school. Such villages as Laichingen and Sindelfingen—names very little known outside of Wurttemberg—have schools for the linen industry. In Rottenburg there is a school for wood carvers; in

Geislingen, a school for engravers; in Rottweil, one for ivory carving; while Gmünd, Heilbronn, and Bieberach have schools for the cheap gold and silver plated ware industries in those localities.

The government of Wurttemberg has done much to introduce and support new industries in certain parts of the country where old industries have died out. Some years ago, for example, the Royal Bureau for Commerce and Trade in Stuttgart decided to give financial assistance to the linen district of Alb, which had greatly suffered from Irish competition. The same was done with the handkerchief house industries in the district of Westerheim. It is the duty of this bureau for commerce and trade to keep in close touch with all the industrial schools in Wurttemberg. It is an institution which collects all sorts of information, data, etc., in regard to the needs of these schools and makes proposals concerning the establishment of new ones.

Industrial education in Baden is far advanced. There is a school in almost every city and village between Heidelberg and the Lake of Constance. Fully 20,000 apprentices are learning how to make clocks and cotton, woolen, and silk goods. Aside from the technical university in Karlsruhe, there is an industrial-art school which is attended by pupils from every part of Baden and these represent almost every trade in the country. In connection with the schools, there are workshops in which the young potter, painter, engraver, wood carver, lithographer, locksmith, blacksmith, cabinetmaker, etc., is getting all the practical knowledge necessary, so that at the end of three years he is master of some particular trade, not merely in name, but in reality.

Hessen can boast of the fact that there is not a single village, no matter how small, in the whole country which has not an industrial school of some kind. They are all under the direction of the Minister of the Interior. Workshops for actual practice are connected with most of the schools.

Bavaria is also well supplied with industrial schools. In connection with most of the courses there are classes for instruction in arithmetic, geometry, German, history, geography, physics, and chemistry. There are special industrial schools for the weaving industry in Passau, Münchberg, and Lambrecht. The last-mentioned school has an especially good reputation. It is not only intended for the cloth industry, but for linen, flannel, cotton goods, and carpet weaving. The manufacturers are in a position to obtain the most reliable information and statistics in regard to their branch of industry at any time.

This short outline will serve to show that great interest is taken in industrial education, and the time is not far distant when the whole Empire will be thickly dotted with schools all equally as efficient as those in Saxony.

RÉSUMÉ.

The industrial schools in Germany, taking the Empire as a whole, cover the following trades and industries:

Weaving.
Finishing.
Cabinetmaking.
Basket making.
Metal.
Zinc.
Jewelry.
Lace.
Mechanics.
Porcelain.
Engravers.
Printing.
Blacksmiths.
Architects.
Shipbuilding.
Spinning.
Wood carving.
Masonry.
Paper.
Bronze.
Goldsmith.
Ivory carving.
Dress trimmings.
Brushes.
Shoemakers.
Lithographers.
Firemen.
Locksmiths.
Iron.
Fisheries.
Dyeing.
Sculpturing.
Clock making.
Sugar.
Tin.
Glass.
Silk.
Curtains.
Potters.
Straw weaving.
Musical instruments.
Machine technology.
Carpenters.
Painters.

ERNEST L. HARRIS,
Commercial Agent.

EIBENSTOCK, *July 1, 1903.*

PREVENTION OF TYPHUS IN GERMANY.

The Chancellor of the German Empire has appointed a commission, of which the president of the imperial German health office is chairman, to visit Southwest Germany for the purpose of studying the means in use for the prevention of the spread of typhus.

The Reichstag, at the last session, appropriated 150,000 marks ($35,700) for this purpose. This was done in order to test the method of Professor Koch. This method is based upon the recognized principle that it is essential to find all the cases of typhus as early as possible and to make a sure diagnosis thereof. It is only when this is done that it is possible to isolate all cases and thereby prevent the spread of the disease. One feature has to be particularly kept in view, namely, that light attacks of the disease occur which do not, or at least only partially, interrupt the daily work of the patients. But such cases are just the ones which ought to be investigated in order to prevent the spreading of the disease, as it is mainly from these that the yet unsuspected typhus bacilli get into the water. Professor Koch has proposed to maintain bacteriological experimental stations in vicinities where typhus occurs most frequently and especially where it has become fixed. The directors of these stations and their assistants will have to do all the necessary work of preventing the spread of typhus. They work hand in hand with the local practicing physicians.

It is desired to have all the typhus stations of the several federal states work in harmony. The work to a certain degree has been made a federal function with a uniform organization.

RICHARD GUENTHER,
FRANKFORT, *July 9, 1903.* *Consul-General.*

GLASS INDUSTRY OF GERMANY.

The annual production of glass in Germany at present is as follows:

Variety.	Quantity.	Value.
Glass:	*Tons.*	
Hollow	133,272	$10,069,780
Green	58,835	7,052,650
Blown plate	13,774	2,448,830
Window	78,487	4,165,476
Rolled plate	39,547	3,503,268
Glass pearls, etc	991	180,166
Total	324,906	27,420,170

The German glass industry to-day comprises 400 factories, which give employment to 35,000 workmen. The manufacture of glass in Germany dates back to Roman times. The necessary raw materials—such as wood, potash, and sand—have always been drawn from home sources. It is only in recent years, however, that Germany has taken up the manufacture of the finer qualities of glass, which thus far have been marketed at home, very little finding its way into foreign countries. Since 1870 the imports from Italy, Austria, England, and Belgium, the great glass-producing countries of Europe, have been rapidly decreasing, and Germany now exports to these nations large quantities of the coarser glass manufactures, such as bottles of every description, etc. It is doubtful, however, whether Germany will ever reach a stage where she will be able to compete with Belgium in mirrors or with Venice in fancy-colored decorations.

The most important raw material for making glass—namely, white quartz sand—is found in Germany in many places in large quantities. Such sand must be entirely free from iron oxide, for the reason that the presence of iron in any shape produces a green color. The purest sands are found in the neighborhood of Aix la Chapelle, in Silesia, and in the whole range of the Erzgebirge, which separates Saxony from Bohemia. The factories, for the most part, have been built close to the sand beds. There are several important glass factories in this consular district. The chemical factories of the Empire furnish all the other necessities of the industry.

If we take into consideration the side lines of the industry—such as the fitting of frames to mirrors, glass painting, and the manufacture of toys from glass—fully 60,000 people are employed in Germany.

In 1900 the Empire imported 13,119 tons of glass and articles manufactured from glass, valued at $2,500,000. The exports amounted to 136,811 tons, valued at $10,000,000. A few years ago six of the largest German glass factories formed a trust, with head offices in Cologne. The German tariff on foreign-made glass has enabled this trust to acquire such a monopoly of the sale of glass and glassware in Germany that it can sell to the home purchaser at higher prices than are demanded for the same articles abroad.

ERNEST L. HARRIS,
Commercial Agent.

EIBENSTOCK, *June 13, 1903.*

GERMAN EXPORT PRICES FOR IRON.

German papers report that an English firm has been awarded the contract for a large gasometer by the city of Copenhagen, being the lowest bidder—£10,930 ($53,185); the lowest German bid was £11,250 ($54,742). The curious part is that the English firm intends to use German material, finishing it in England. It will be bought in Germany at export prices, which are about cost or even less. The papers state that the German manufacturers of gas reservoirs can not purchase their raw material in Germany as cheaply as foreign firms can, and therefore can not compete with English manufacturers. They also state that similar conditions exist in other branches of home industries using iron. The producers of iron are called upon to revise their prices in favor of home consumers.

RICHARD GUENTHER,
Consul-General.

FRANKFORT, *June 20, 1903.*

EXPORTS FROM GERMANY TO THE UNITED STATES.

I forward herewith a consolidated statement showing the value of the exports declared at the several consular offices in Germany for the United States (the agencies being embraced in the returns for the respective consulates-general and consulates under whose jurisdiction they are placed) for the fiscal years ended June 30, 1902 and 1903:

Consulate.	1902.	1903	Increase.	Decrease.
Aix la Chapelle	$1,623,343.26	$3,007,469.77	$1,384,126.51	
Annaberg	2,111,862.80	2,631,629.39	519,766.59	
Bamberg	786,232.22	1,178,471.46	392,239.24	
Barmen	5,969,235.62	7,454,774.31	1,485,538.69	
Berlin	8,234,607.87	9,431,416.99	1,196,809.12	
Bremen	3,137,081.52	2,715,463.40		$421,618.12
Breslau	1,345,738.29	1,347,491.50	1,753.21	
Brunswick	2,014,786.49	2,595,643.23	580,856.74	
Chemnitz	6,081,788.67	8,144,185.88	2,062,397.21	
Coburg	2,564,315.00	3,552,609.00	988,294.00	
Cologne	3,141,418.34	4,374,412.07	1,232,993.73	
Crefeld	2,638,094.12	3,047,084.51	408,990.39	
Dresden	1,390,923.32	1,603,324.86	212,401.54	
Düsseldorf	2,186,585.17	4,925,841.68	2,739,256.51	
Frankfort	7,498,674.79	8,056,483.42	557,808.63	
Freiburg	1,199,709.34	1,029,701.58		170,007.76
Glauchau	604,744.89	648,446.00	43,701.11	
Hamburg	10,360,361.14	11,449,576.07	1,089,214.93	
Hanover	901,966.53	362,469.37		539,497.16
Kehl	2,105,918.06	2,688,183.18	582,265.12	
Leipzig	7,763,770.37	7,692,880.44		70,889.93
Magdeburg	6,346,316.67	6,325,216.18		21,100.49
Mainz	2,302,015.91	2,524,958.98	222,943.07	
Mannheim	4,225,720.79	6,249,908.36	1,024,187.57	
Munich	813,839.34	940,821.80	126,982.46	
Nuremberg	3,859,801.16	4,782,269.00	922,467.84	
Plauen	3,515,574.70	4,268,730.92	753,156.22	
Solingen	1,543,584.45	1,621,714.16	78,129.71	
Stettin	2,126,615.56	2,107,421.61		19,194.95
Stuttgart	1,115,963.97	1,392,185.54	276,221.57	
Weimar	1,146,152.07	1,209,881.00	63,728.93	
Zittau	1,057,321.91	1,367,960.04	310,638.13	
Total	101,714,064.34	120,738,625.70	20,266,867.77	2,242,308.41
Net increase		19,024,559.36		

FRANK H. MASON,
Consul-General.

BERLIN, *July 3, 1903.*

GERMAN FOREIGN TRADE.

IMPORTS.

German imports for the first five months of 1903 amounted to 17,579,274 tons, against 15,930,416 tons and 16,703,727 tons for the corresponding periods of 1902 and 1901, an increase of 1,648,858 tons over 1902 and of 875,547 tons over 1901.

Of the 43 tariff groups, 31 show an increase and 12 a decrease. The largest increases were in clays, ores, etc., $572,183; coal, $356,013; cereals, $260,397; woods, $177,605; waste, $108,523; petroleum, $42,501; cotton and cotton goods, $260,397; and stones and stone goods, $36,848.

The largest decreases occurred in groceries ($24,355), mainly on account of rice, meat, raisins, and salt, while imports of butter, currants, coffee, dried fruit, and wheat flour increased. The imports of flax and wool also show a considerable decrease.

EXPORTS.

The German exports for the same period were 15,272,944 tons, against 12,935,830 tons and 12,336,015 tons for the same periods in 1902 and 1901, an increase of 2,337,114 tons over 1902 and of 2,936,229 tons over 1901.

Of the 43 tariff groups, 34 show an increase and 9 a decrease. The largest increases were: Coal, $1,374,394; clays, ores, etc., $548,205; iron and iron wares, $303,065; drugs, pharmaceutical articles, and dyestuffs, $50,628; cereals, $40,594; clay goods, $33,992.

A considerable decrease occurred in groceries ($69,984). The decrease in raw sugar is larger than the total decrease of the groceries group, amounting to nearly 50 per cent compared with 1902. The exports of raw sugar to Great Britain decreased more than 50 per cent; the exports to the United States did not quite reach one-thirtieth of those of the same period of the previous year. Refined sugar also showed a large decrease on account of reduced exports to Great Britain, Japan, and South Africa.

RICHARD GUENTHER,
Consul-General.

FRANKFORT, *June 25, 1903.*

NEW MEAT-INSPECTION LAW IN GERMANY.

The new meat-inspection law went into effect in Germany on April 1, 1903. What trouble and expenditure it must bring to the importer and how much it is sure to increase the cost of living to the consumer may be seen from a case which occurred recently at Bremen.

A local firm had imported 20 barrels of pork livers from New York which were examined at Bremerhaven in accordance with the new rules and regulations. At the end of the examination, the following bill was presented and paid to cover the expenses:

	Marks.	
To general fees for examination	75.65	=$18.00
To chemical examination	60.50	= 14.40
To examination for trichnæ, 50 pfennigs for each 587 livers	293.50	= 69.85
Total	429.65	=102.25

In addition the firm had to pay duty on said livers as follows: Gross weight, 3,596 kilograms (7,929 pounds), less 16 per cent tare; net weight, 3,020 kilograms (6,659 pounds) at 17 marks ($4.04) per 100 kilograms (220 pounds), or 513.50 marks ($122.21).

Hence the cost for bringing these 20 barrels of American hog product into this country amounted to 943.15 marks ($224.47), or more than 30 per cent of the original cost of the goods, which was only 3,000 marks ($714).

This case gained considerable notoriety and was brought to the attention of the proper department at Berlin. It was hoped that the authorities there would order a reduction of the charges for entering these livers, which, as a precautionary measure, had been boiled before shipment, so as to remove any objection. However, the Secretary of the Interior decided a few days ago that, inasmuch as these livers weighed less than 4 kilograms (8.82 pounds), section 12 of the second chapter of the new law absolutely prohibited their importation into Germany.

HENRY W. DIEDERICH,
BREMEN, *June 5, 1903.* *Consul.*

GOVERNMENTAL HORSE INSURANCE IN BAVARIA.

Bavaria has within the last thirty years made remarkable progress in the domain of governmental insurance. The centralizing and modernizing of insurance by the government against fire in 1874 was followed in 1884 by an insurance provision against hail, which the state officials and farmers alike consider a most unique institution. In 1896 Bavaria provided government insurance of cattle, recognizing the great importance of the cattle industry to this Kingdom. After that provision had stood the test of time, the minister of the interior, Dr. Baron von Feilitzsch—the originator of hail and cattle insurance—took steps leading to the solution of the more difficult problem of the insurance of horses.

A statement of accounts has just been issued by the Royal Chamber of Insurance regarding the Bavarian horse insurance, which, by the law of April 15, 1900, went into effect on November 1, 1900, and has therefore passed its first business years.

This latest benevolent institution of Bavaria awakens the deepest interest among horse owners, and is furthered by the state and the townships. It has already overcome the initial difficulties and developed so surprisingly that it may be reckoned as one of the greatest of horse-insurance institutions. Like all other Bavarian governmental insurance, it rests upon the foundation of unions. These unions embrace entire districts as subdivisions. There are now 398 combined unions, with 34,748 horses, and an insurance capital of 28,666,540 marks ($6,822,636). This remarkable success is due to the cooperation of the Bavarian government and influential people interested in horse breeding. The management has eschewed all bureaucratic tendencies, and the state and township officials have been mainly friendly counselors to the parties directly interested.

I gather from the yearly report that the officers of the Royal Chamber of Insurance assist in the founding of the unions and are detailed to suggest and supervise the conduct of the business of the unions, but without an attempt to participate in their management. A paper of instruction from the skillful pen of the director of the royal stud, Mr. Schwarzmaier, is published by the Royal Chamber of Insurance and gratuitously circulated among the various unions.

Bavarian governmental horse insurance is not exclusively for the benefit of agricultural interests, but is an institution for city as well as country people. It extends to all regions where horses are bred, and counts many of the cities of Bavaria in its unions.

JAMES H. WORMAN,
MUNICH, *June 1, 1903.* *Consul-General.*

SAMPLE MUSEUMS IN GERMANY.

In the following report, dated June 27, 1903, Mr. Ozmun, our consul at Stuttgart, Germany, calls attention to the Sample Museum (Musterlager) of that city. A word as to the place occupied by a sample museum in German industrial and commercial life may not be out of place as a preface to Mr. Ozmun's report. For the last twenty or thirty years Germany has been doing a great deal of hard work to secure and to maintain a place in foreign markets. The number of the agencies employed to assist in this work is very large. From the huge subsidies granted by the Government to the steamship companies down to the humble letter of a hillside laborer is a long way, but it is a way filled with all forms of effort. Some years ago there were formed all over the Empire, in connection with, and not infrequently independent of, the colonial movement, export unions. Among the most famous as well as most important of these, Stuttgart's and Dresden's may be mentioned. After a time it occurred to the directing agencies of these bodies that a good way to aid merchants and manufacturers was by gathering catalogues, samples, etc. Commissions, consisting of experts in commerce and manufactures, were sent into all parts of the world for the purpose of studying and reporting on foreign markets. Quite a number of such expert commissions are always on the road. There is one, at least, in the United States at the present time. It has at its head a Minister of State, a member of the Emperor's Cabinet. These commissions are authorized to collect samples. They are given power to do so, the union paying for them, the commissioners using their own discretion in the selecting. Consuls, too, are called on for samples, and often send valuable collections. On one occasion a commission sent by the Germans visited the Orient and collected a great many samples. These were afterwards exhibited for several days in the halls and corridors of the Imperial Parliament. They were then sent to large industrial and commercial centers and put on exhibition for the benefit of the workmen and workwomen who could not afford a trip to Berlin. They were afterwards divided among the sample museums—textile centers getting textiles and iron districts getting iron and steel products. The sample museum is an excellent auxiliary of the Empire's industrial, industrial-art, and technical schools. While it would be hard to estimate their value in dollars and cents, the German merchant and manufacturer have come to regard them as a part of the popular system of education.

The abstract, of which Mr. Ozmun's report is a résumé, says:

> Business in the trans-Atlantic countries was just as quiet as in Germany during the past year, on account of low prices for coffee and the decline in silver, and also on account of political troubles and other unfavorable circumstances; and, although more visitors called at our institution [Stuttgart Musterlager], the total business of 1902 was about 15 per cent smaller than in 1901. Most of our customers bought only what they required for immediate use. North American firms only gave large orders, and it gives us great pleasure to be able to report an increase of trade with the United States.
>
> For the purpose of calling the attention of foreign buyers to our institution and to our continual exhibition of German industrial products, we have mailed a large number of circulars. The domestic as well as the foreign press helped us a great deal by making detailed reports regarding our institution, for which we wish to express our thanks.
>
> The number of firms giving orders at our institution and by mail was as follows:

1900	337
1901	342
1902	406

Detailed statement of orders given.

Year.	At our office and by mail.	By agents.	By our branch in Hamburg.	Total.
1900	1,776	49	1,045	2,870
1901	1,772	33	1,050	2,855
1902	1,828	65	917	2,810

> The orders given at our office and by mail were divided among 506 firms.
>
> It has been our principle, ever since this institution was founded, to sell for cash only, and consequently our members suffered no losses.
>
> Seventy catalogues were mailed; the total of catalogues mailed so far is 9,920.

The total number of letters received during the past year was 11,715, against 12,486 in 1901; number of letters mailed, 16,290, against 17,620 in 1901.

Our director visited, during the past year, Vienna, London, Bremen, Düsseldorf, and Frankfort, and made several new connections.

Business with Greece increased a little through the efforts of our agents.

Our branch in Hamburg (Deurer & Kaufmann, Hamburg, Africa house) also felt the general depression to a certain extent.

Business is a little more active since the beginning of the current year, and we expect a larger total this year.

Besides receiving large orders for metal ware of every description—clocks, jewelry, musical instruments, etc.—our branch in Hamburg has extended its machinery department and has succeeded in receiving large orders for machines.

We recommend, therefore, that members handling machinery should send their catalogues to our branch in Hamburg.

Here in Stuttgart there has also been a decided improvement during the first four months of the current year. Exports to Australia especially are steadily increasing. The large stock on hand seems to be sold at last, and the foreign buyers are placing large orders.

MANUFACTURE OF MUSICAL INSTRUMENTS IN GERMANY.

The manufacture of pianos in Germany has reached a state of perfection attained by no other nation. Admitting that in other countries particular firms produce instruments which in every respect are equal to the best German make, it is claimed that as an industry, considering the number of factories and the high exports to nearly every country in the world, the manufacturers of this Empire are a long distance in advance of all their rivals. In spite of the enormous sale of pianos every year within the limits of the Empire, the manufacturers are dependent upon the markets of foreign countries for the sale of fully one-half of the number produced.

The success of the German pianos is due to the fact that they are cheap, comparatively speaking. Two hundred and fifty dollars will buy a very fine upright piano in this country. The construction is always apace with the latest art designs, special attention being paid to the woodwork; they not only present an elegant appearance, but are solid and durable.

There are 435 piano factories in Germany, which manufacture 80,000 instruments annually. One hundred and forty factories are located in Berlin, 27 in Stuttgart, 21 in Dresden, 16 in Leipzig, 15 in Hamburg, 10 in Leignitz, 9 in Zeitz, while the rest are located in Dresden, Munich, Halle, and Brunswick. During the past twenty years the export of ready-made pianos and parts has increased from $1,900,000 to $6,110,000. Great Britain is at present Germany's best customer, buying over 40 per cent of the total exports. Prior to 1890 Argentina was the best market for German pianos, especially for those made in Halle. Australia is also a chief market, buying nearly $1,000,000 worth of pianos every year. In ten years Belgium has increased her import of German pianos by 100 per cent, while Russia and Holland purchase about $1,000,000 worth a year. In addition to these countries, large quantities are sold to almost every country in South America and to Norway, Sweden, and South Africa.

There are some 265 factories for the manufacture of church organs in Germany. The greater number are small establishments, which produce only for home use. There are a few factories, however, which export to Russia, Great Britain, and Austria-Hungary.

The chief centers for the wholesale manufacture and export of stringed instruments are Markneukirchen and Klingenthal, here in the Saxon Erzgebirge, and Mittenwald, in Upper Bavaria. In Markneukirchen the industry is greatly assisted by the patronage of the State, and an industrial school has been established which is under the supervision of the Saxon government. The export of musical instruments from the Markneukirchen consular district to the United States for the fiscal year ended June 30, 1902, amounted in round numbers to $684,000. The manufacture of the different parts of stringed instruments is carried on chiefly in the worker's own home. The so-called "Hausindustrie" is highly developed, not only in the musical-instrument centers, but in the dress-trimming and kid-glove towns of the Erzgebirge as well. In the manufacture of guitars, zithers, banjos, etc., Markneukirchen is very successful, although the neighboring town of Klingenthal is a close rival. A few years ago two or three firms at Johanngeorgenstadt, in this consular district, started the manufacture of accordions and zithers, which has been attended with considerable success.

In addition to the above-named musical instruments, Germany manufactures large quantities of violins, brass instruments, mouth harmonicas, drums, etc. If we take into consideration all the people employed in the musical-instrument factories and the side lines which are akin to this industry, the number will easily reach 30,000.

ERNEST L. HARRIS,
Commercial Agent.

EIBENSTOCK, *June 15, 1903.*

PORTLAND CEMENT IN GERMANY.

In reply to various inquiries from the United States concerning the present condition and prospects of the Portland-cement industry in Germany, the following report is respectfully submitted:

The cement manufacture may be designated as that one of the great, long-established industries in this country in which the capacity of production is most excessive and disproportionate to the normal consumptive power of the people. There were in operation in this country at the close of 1899 261 cement factories, and their number has increased rather than diminished since that time.

During the year 1901 there was consumed in Germany 14,600,000 barrels of cement, while the reports of the several syndicates show that the collective productive capacity of all their factories for the same period was 29,000,000 barrels per annum. The power of production had thus, in respect to Portland cement, outgrown the actual home demand by 100 per cent. Just how much cement was really produced in that year is difficult to ascertain. The cement factories of Germany are divided into several syndicates, which fight each other with persistent valor and reveal as little of the inside workings of their several organizations as possible; but from all indications and estimates, there must have been in 1901 a surplus of from 10,000,000 to 12,000,000 barrels, of which there was exported 506,652 tons, leaving a large excess, which broke down the market, reduced profits to a pittance, and brought on a crisis in the industry from which it has not yet recovered.

In tracing the causes which led up to this result, it is noticeable that during the ten years from 1890 to 1900 all kinds of construction which use cement were phenomenally active in Germany, and the consumption was enormous and steadily increasing. Millions of barrels were used in the construction of the Kaiser Wilhelm and Ems canals and in improvements in the Rhine, Weser, and other rivers. It was expected that the Midland Canal would also be authorized and the cement factories made preparations to meet that additional demand, so that the failure and postponement of the project were among the contributing causes to the overproduction of that period. The situation led to a new effort to unite the several local syndicates and groups into which the cement makers were divided into one national and all-embracing combination, which could restrict the output, shut down superfluous factories, and, by getting the industry thoroughly in hand, restore prices to a profitable basis. All such efforts proved futile, and the war between the competing factories was bitter and unrelenting.

The year 1902 brought no substantial relief. The supply of cement everywhere exceeded the demand. Building operations slackened under the general industrial and financial depression, while labor and fuel—two of the principal factors in cement production—maintained practically undiminished values since the prosperous years preceding 1900. The only outlet for the surplus was through exports, and these slowly increased from 497,780 metric tons* in 1898 to 528,676 tons in 1899, 543,991 tons in 1900, and 641,520 tons in 1902. Of this large export the United States takes a larger share than any other nation, the shipments to our country aggregating 197,174 tons in 1900, 108,596 tons in 1901, and 246,726 tons in 1902. Next in order of importance in this respect comes the Netherlands, which last year took 66,837 tons of German cement; British South Africa, 36,720 tons; Great Britain, 33,534 tons; and Brazil, 18,209 tons.

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* 1 metric ton=2,205 pounds.

Under the present tariff, cement is free of duty when imported into Germany, and there was a small influx of 51,947 tons in 1902, which came across the border at points in Belgium, Denmark, France, Austria, and Switzerland, where factories near the frontier were geographically tributary to German territory. To shut out this slight competition the new German tariff imposes a duty of 50 pfennigs (about 12 cents) per 100 kilograms ($1.20 per metric ton) on cement, as against $4.04 per ton duty assessed by Russia, $2.38 in Austria and Switzerland, $1.42 in Sweden, and $1.76 in the United States.

The sum of all recent information is that only the oldest and largest factories in Germany, which enjoy every advantage of location for obtaining raw material and handling their product, are able under present conditions to earn any substantial profit; many of the newer and smaller establishments are working at a loss. Early in the present year there was a meeting in Berlin of cement manufacturers from all parts of the Empire, which, after a long, secret session, appointed a commission to consider and report in April upon a plan for the organization of the entire industry under a cartel, or syndicate, which should control output and manage the market. Thus far it would appear that the commission has not reported, and its continued silence is construed as an indication that the differences between local syndicates and individual factories have again been found irreconcilable, and that no general basis of combination can be reached.

FRANK H. MASON,
Consul-General.

BERLIN, *June 16, 1903.*

FRENCH-AMERICAN TRADE REQUIREMENTS.

American exporters very often judge the value of their goods and the needs of foreign purchasers by their own standard. This standard may be true as far as the conditions of the United States are concerned, and partly or entirely false when applied to other countries. The American manufacturer should know the requirements of the people whose trade he seeks and should try to satisfy them.

The French have fixed habits, from which they do not easily change nor wish to change. Once satisfied with a certain manufactured product and thoroughly accustomed to it, they will not change except from inability to obtain it or for marked improvement in some new article, which must be clearly demonstrated. Everybody wants the best, but the improved article or new product must be brought to the attention of the prospective purchaser in a very definite fashion.

Formerly Americans came to France to purchase brandy, and even paid the manufacturer a commission for selling them the product of his still. This condition still obtains in certain quarters, but the general conditions are changed. French distillers have found it necessary to send out traveling agents to secure business for them. One of the results is that Americans will often purchase an inferior grade of brandy of a "marque" already tasted rather than a superior quality of goods which they have never seen.

Our manufacturers often expend their energies and their money in a way far from practical. For instance, I receive at this office hundreds of circulars during the year, printed in English, describing certain articles of export. I send them to the proper dealers, but they can not read them. There are instances where I have spent days in translating descriptive pamphlets at the request of the persons here in whose hands I had placed them. It is impossible to translate all, as no provision is made for work of this kind at this office. Even were descriptive circulars published in French and sent out to dealers, it would at best but prepare the mind of the French merchant for a commercial traveler. The traveler, unfortunately, does not follow the circular, and the energy is, to a great extent, lost. In view of existing modern trade bureaus and associations, it would seem possible that one traveler could represent several firms dealing in very diverse merchandise. By this means the dealer here could have what is necessary to successful business—a practical demonstration of the utility of any particular product.

American exporters desirous of doing business in France must adapt themselves to the needs of the country. Their circulars should be printed and their correspondence carried on in French. The commercial traveler should speak that language. The fact that neither buyer nor seller understands the other well causes at least hesitation and delay in reaching business. The French think, and perhaps with more or less reason, that we are not always careful enough in our business methods, and, although sincere in recommending our goods, are very often not sufficiently acquainted with the qualities they possess. We send our wares to France, declaring that there are none better. This may be perfectly true from our point of view, but the natural richness of our country has rendered us more or less prodigal and we have not made the careful study of the economic value of certain products that has been made in France. Let us take two commodities, coal and lubricating oils, for instance. Several million tons of coal are imported annually, while the entire quantity of petroleum used is imported. The necessity of buying from another country, of paying transport and high duty, has forced a careful study in economic values, by means of theoretic computation, most delicate laboratory tests, and practical experiment. Most of the French railway companies have laboratory apparatus for tests, not used at all by, and perhaps in some instances not known to, the shippers of the commodities.

Concerning coal there has been a woeful confusion in the definition of the terms "tout venant" (run-of-mine), "menu" (fine), etc. There is an evident and appreciable distinction between the French and American conceptions of what each considers equivalent terms. The result was that on receiving United States coal it was considered inferior to English coal sold under the same categorical name, the reason being that American exporters did not endeavor to maintain the relative proportions of large and small, not taking the French definition of "tout venant" into consideration.

While this misunderstanding is partly due to difference in language, it is principally due to disregard of the commercial customs of France. We may be able to impose our conditions when we wish to buy, but this is more difficult to do when we are the sellers. The purchaser should be put to the least possible inconvenience if we want to keep his trade. Our exporters should, as far as necessary, adapt themselves to the business habits of the people to whom they wish to sell.

There has been a large correspondence passing through this office relative to American phosphates and superphosphates. Our dealers insist:

1. In some instances, in quoting prices f. o. b., when they should know that, as a rule, transport or freight rates on regular lines are only quoted at the ports where the goods are to be put on board, and that agents at the port of destination are generally ignorant of freight rates to this port. It is only exceptionally that agents can quote other than rates from their ports.

2. That payment be made on basis of weighing and analysis at port of sailing. This is very favorable to the seller, but it indicates a certain lack of business confidence in the purchaser, who has just as much right to protect himself by weighing and analyzing the cargo on arrival in France. The seller may impose conditions on the sale of a necessity when he has no competitor; otherwise he should strive to please his customer. To show how far American business

caution may be due to lack of knowledge of the French language and of business customs, take this illustration: In a comparatively recent transaction American shippers demanded payment on the basis of weight and analysis taken when phosphate was put on board in Florida. The French buyer offered payment on the basis of weight and analysis taken at La Rochelle. The result was that there was no agreement and the deal was declared off. An English broker presents himself, offers to the French buyer on the latter's conditions at slightly higher figure, and is accepted. The English broker knows of the American offer, which he accepts and orders goods shipped to La Rochelle. He has business confidence in the American shipper. The Frenchman pays more for his goods, but buys less American and more Algerian; the United States exporter gets his terms, but does less business. The evident need here is a better understanding, resulting in direct transaction to the mutual interest of both countries, but especially to the one that sells.

Our exporters, in order to further their own interests, should also, as far as their relations with France are concerned, adapt their business to the metric system of weights and measures. There is nothing more annoying to a French purchaser than to be forced to make a reduction of our weights to the very reasonable and logical metric system. He may ask for a price per 100 kilograms (220.46 pounds), and his ton, to him, consists of 1,000 kilograms (2,204.6 pounds). Other nationalities who have maintained trade for any length of time with France quote prices by this system. We should do so if we wish to please. The French merchant will quote to us his fine brass-wire twills by the square yard, knowing that thereby we grasp the matter at once. He will quote us prices of brandy per gallon for the same reason, although he buys by the hectoliter (26.417 gallons).

I believe that our commercial relations with France can be greatly augmented by a better mutual understanding of business habits and the requirements of the market. The friendliness of these relations would be still further enhanced by the total disappearance of that suspicion which owes its existence to lack of acquaintance.

No man has a keener sense of business honor than a Frenchman. Cultivation of his acquaintance by actual contact in business will dispel on both sides any doubts of the genuineness of American or French sincerity.

GEORGE H. JACKSON,
Consul.

LA ROCHELLE, *June 27, 1903.*

HOW TO INCREASE OUR EXPORTS TO INDIA.

I have before called attention in my reports to the necessity of having more rapid and reliable freight lines between New York and Calcutta in order to increase our trade with India.

The Bucknall Line, whose steamers sailed at irregular times and touched at so many ports—taking about fifty days in making the passage—has been withdrawn, and now the only way to ship goods from New York to Calcutta is via Glasgow, Liverpool, London, or Naples, and the goods are frequently delayed a long time waiting transshipment. Thus it often happens that they are not received until after they are required and are consequently left on the hands of the importers.

India has been neglected by our exporters, so that out of $250,000,000 worth of goods imported annually the United States last year had only about 1.5 per cent of the trade, while the United Kingdom had about 67 per cent and Germany, France, and Belgium, in the order named, the larger part of the remainder.

About 50 per cent of the imports are cotton goods and the next largest are iron and steel manufactures. In both of these the United States should be able to compete successfully with any other country.

If a direct line of steamships were established between New York and Calcutta, sailing regularly—not less than once every month, and oftener when the trade increased to warrant it—the passage not to be more than forty days, so that importers could rely upon receiving their goods at specified times; and if our exporters would put active, capable men in the field to exploit the markets of the country, our trade would be increased many-fold within a very short time.

There are no restrictions on trade in India, and there is no reason why our exporters should not compete successfully with those of the United Kingdom, especially in cotton goods and all manufactures of iron and steel. The only obstacle is the want of more rapid transit for their goods and more determined efforts to secure the business.

Such a steamship line as suggested would be sure to receive return cargoes, as our imports from India are now large and constantly increasing, amounting to about $35,000,000 last year.

There is such an opening in India for the expansion of our trade that I can not urge too strongly that the necessary means be adopted to secure it.

R. F. Patterson,
Consul-General.

Calcutta, *June 17, 1903.*
No 276—03——3

DATA COMPILED BY THE BUREAU OF STATISTICS.

India's commerce is as interesting to Americans as it is to any people except, perhaps, the Indians and English. When it is remembered that India ranks sixth among exporting and tenth among importing countries, the volume of her trade may be partially measured. Last year India's exports were valued at $403,000,000 and her imports at $264,000,000. Of India's $264,000,000 worth of imports, 36 per cent were cottons. Next on the list of imports are iron and steel products, which form 12 per cent of the total. Third in importance on the list of India's imports is mineral oil—5 per cent of the total imports.

Thus, of India's imports more than 50 per cent are of a class that might be called indigenous to the United States, and the greater part—fully three-fourths—of the entire list is made up of a class of articles successfully produced by and exported from the United States; and yet our exports to India amount to less than 2 per cent of the imports of that country.

The United States imported East Indian goods in 1892 to the value of $24,773,107 and in 1902 to the value of $48,421,218. The exports thither from the United States in the years indicated were $3,674,307 and $4,621,876, respectively. The most important imports to the United States from the East Indies are: Jute manufactures, $10,000,000; jute, unmanufactured, $4,000,000; hides and skins, $8,000,000; gums, $2,000,000; etc.

India's growing importance.—India has advanced from $28,000,000 in imports in 1840 to her present $264,000,000; her exports have increased equally fast, or from $51,000,000 in 1840 to $403,000,000. Of the total foreign trade in 1902 ($667,000,000), Great Britain naturally supplies the largest part. Her share was 64.5 per cent; the British colonies, 5.3 per cent; or a total British trade of 70 per cent. Following Great Britain, but a long way behind, come Austria-Hungary, with 4.8 per cent; Russia, 3.9 per cent; Germany, 3.7 per cent; Belgium, 3.7 per cent; China, 2.2 per cent; France, 1.7 per cent; and the United States, 1.4 per cent. In 1899 the United States supplied 2 per cent of India's imports; in 1900, 1.7 per cent; in 1901, 1.6 per cent; and in 1902, 1.4 per cent. Of India's exports, England's share was not so large as her share in the imports, while the share of the United States therein was very much larger than her share in the imports. Of the total exports of India in 1902 ($403,000,000), Great Britain took 25.1 per cent; the Straits Settlements, Egypt, and Ceylon, 13.9 per cent; China, 14.5 per cent; Germany, 8.4 per cent; France, 7.3 per cent; and the United States, 6.9 per cent.

Carriers of India's commerce.—Of the vessels entering and leaving India's harbors last year, 79 per cent sailed under the British flag. If the tonnage is taken into consideration, it will be found that Great Britain did 81 per cent of the total trade. It is officially reported that German and Austrian tonnage are rapidly growing. Germany's increase is indicated by the fact that her figures were 209 ships for 1900 and 270 for 1902; Austria's, 131 in 1900 and 164 in 1902. The French figures fell from 155 in 1900 to 149 in 1902, and Norway's from 82 to 78.

AMERICAN INTERESTS AND OPPORTUNITIES IN SIBERIA.

AGRICULTURAL MACHINERY.

Agricultural machinery and appliances of American manufacture, as is well known, are widely used in the pre-Amur country. For these goods—especially for harvesting machinery—there is such a demand that private firms can not fill the orders.

The Ministry of Agriculture, desiring to aid the local peasant proprietors, has set apart a fund to establish at Habarofsk a Government warehouse for agricultural machinery and appliances. It has directed the pre-Amur management of imperial properties, as its representative in this section, to organize such an establishment. As the management intends to operate to a large extent in American goods, it is at present greatly in need of information from competent sources regarding the purchase and importation of such goods from the United States. The management therefore requests information on the following points:

1. The addresses of firms dealing in agricultural machinery.
2. The addresses of firms manufacturing such machinery, with price lists and catalogues.
3. Lists of steamships plying between the United States and Vladivostock.
4. The best terms of purchase of such machinery.

Agents of several firms are on the ground, or have been. In the past, business firms hereabouts have done good work and accomplished excellent business results in these lines. No traveling agent, however, spoke Russian and no catalogues or prices, except those reprinted by agents here, have been in the Russian language. Some catalogues of agricultural-implement firms are on hand, but only a few—none with bottom prices. These should be forwarded, even though in English. What is needed is prompt replies to this office of lowest quotation, cash or time (preferably the latter), and a brief catalogue in Russian, of which several copies are needed. Meanwhile, any printed matter sent should be mailed via Moscow, "R. T. Greener, commercial agent, U. S. A., Vladivostock, please forward."

Telegraphic addresses of many firms are at hand and some catalogues. What is needed is as complete a list as can be furnished, with lowest prices, prospective freight charges, and statements as to cash or time.

FLOUR MILL.

The American firm of Clarkson & Co., established here some five or six years, has made application to the local authorities for a 24-year lease of 54 acres of land owned by the city at Cape Firsoff, near the Ussuri Railway, 6 miles from the city, at a rental of $309 per year for the first twelve years and $618 per year for the last twelve years. The firm proposes to erect there a flour mill, provided with all the latest American appliances. The buildings will be 4½ stories, with accompanying lodging houses and warehouses and a branch railroad to connect with the main Ussuri line.

It is proposed to invest $51,500 in this enterprise, which is said to have official countenance if not financial support. At the expiration of the term of lease all the buildings will become the property of the city. This firm already has several coal and gold mines under exploitation, a saw mill which runs in connection with a sash and blind and door factory, a contract for granite work on one of the new wharves, and a lease of some supposed valuable mineral lands near St. Olga Bay, of which great expectations are expressed. This firm has also branch offices at Nagasaki, Port Arthur, Tientsin, and Harbin.

R. T. GREENER,
Commercial Agent.

VLADIVOSTOCK, *May 8, 1903.*

SUPERIORITY OF AMERICAN LOCOMOTIVES.

The German papers have recently been circulating the report, and it has even gained currency in the English press, that the locomotives which have been purchased in America by the Bavarian state railways within the last three years had proven unsatisfactory, and that their durability had been called into question. In these reports it is also asserted that experts had declared that the American locomotives could only last at best from eight to ten years, while the locomotives manufactured in Bavaria had stood service for thirty years, and that for these reasons, as well as because of frequent necessary repairs, the further use of American locomotives had been abandoned.

From official sources the information is obtained that these reports are unauthorized and wholly groundless. The facts are that the locomotives which had been bought in order to study the American system of locomotive building have proven, because of their simplicity, their originality of construction, and their remarkable locomotion for fast and freight trains, most acceptable, especially as to durability and efficiency, and that up to this time nothing has been discovered to warrant a statement that, with the same care bestowed upon them as upon the Bavarian locomotives, the American locomotives would prove less durable than those built here. Indeed many of the parts of construction have been found so simple and practical that they will be adopted in the construction of Bavarian locomotives.

JAMES H. WORMAN,
Consul-General.

MUNICH, *June 1, 1903.*

AMERICAN AUTOMOBILES IN MALAGA.

Within the past few months an interest in automobiles of American make has been manifested in Malaga. This is due in part to the recent importation of a French machine of the racing type, which is the only automobile now in Malaga.

A few days ago one of the most influential men in this city requested me to procure for him price lists and catalogues of American automobiles, and to-day another of Malaga's representative men informed me that he had just placed an order with a Detroit firm for the purchase of a machine propelled by gasoline, and that several of his friends are awaiting the advent of the first American machine to compare it with European designs. This seems to be an excellent opportunity for American manufacturers who desire to establish a market here, as the marked advantage in prices in favor of American machines seems to be understood in Malaga. The roads about this city offer facilities for trips to near-by villages, and the outlook is that within a short time many machines will be in use here.

If American manufacturers will send their catalogues or other reading matter to this consulate, I shall take pleasure in handing them to parties interested and in placing them in the reading room of the principal club of Malaga.

Promptness of delivery is an essential point that should not be overlooked by American manufacturers sending machines to Spain. The French makers have an immense advantage in this respect.

I am informed that nowhere in Spain—certainly not in this section—is there an American automobile firm represented by an agency.

D. R. BIRCH,
Consul.

MALAGA, *June 10, 1903.*

AMERICAN GOODS AT THE OSAKA EXHIBITION.

Consul S. S. Lyon sends from Kobé, May 20, 1903, newspaper clipping descriptive of the foreign exhibits at Osaka, as follows:

The exhibits in the large building just to the rear of the Canadian Building are well worth a visit. They are absolutely and entirely American and represent the agencies that Mr. F. W. Horne, of Yokohama and Tokyo, controls. Mr. Horne could only obtain a space of 7 tsubo (42 square feet) in the Foreign Samples Building, and as this would not have answered his purpose he decided to erect a building for himself. It covers 200 tsubo (1,200 square feet) and is fitted as nearly as possible as a model machine shop, with plenty of light and air, and contains over 150,000 yen ($74,700) worth of the latest American machinery, all in working order.

The biggest exhibit is a Miles-Bemant-Pond Company and Pratt & Whitney radial boring drill and 37-inch boring and turning machine. There are also, by the same firms, a slotting machine, a horizontal boring machine, a steam hammer, and some specimens of small tools. Many ingenious appliances are shown by the Chicago Pneumatic Tool Company. Close by is a 24-inch Gisholt lathe, which, together with two larger ones, has been sold to the Mitsu Bishi Company. There are also some printing presses by Chandler & Price, lathes by Bradford & Sebastian, and a compressor made by the Rand Drill Company. A good many engineers thoroughly understand the principles of boilers, but do not know how to set them properly. Mr. Horne has placed a 50-horsepower boiler in position, leaving a portion of the brickwork open, so that students and others interested may examine it and learn how to set a boiler with accuracy. We understand that many young Japanese engineers and mechanics have already taken advantage of the useful information which may be derived from a study of this somewhat novel exhibit.

Just above this, one of the Buffalo Forge Company's disk ventilating fans has been fixed and creates a perfect passage of air on the "down draft forge" system. The Fay-Egan Company has on view a wood-working machine, including a No. 9 band-saw mill, a planer and matcher, a band scroll saw, and a variety saw and hand planer. There is a full line of Laidlaw, Dunn, Gordon, and Asiatic duplex steam pumps; and lathes and planer chucks, made by the Skinner Chuck Company. On the wall is a fine case of "instruments of precision," by Brown & Sharpe and L. S. Starret. Some examples are shown of Messrs. W. F. & John Barnes's drills and lathes, one of which has been sold to the Fukuoka Technical School and one to Mr. Shimadzu, of Kyoto. The Unozawa Works, at Tokyo, have bought one of this firm's 22-inch drills, and the Mayejima Works, at Tokyo, are the purchasers of a 22½-inch drill. A Warner & Swathey hexicon lathe, capable of very fine work, is exhibited, together with a 16-inch monitor lathe for making valves, and Ashcroft steam gauges. Brown & Sharpe have a fine display, including a 36-inch automatic gear cutter and an automatic service grinding machine. One of the most complicated and interesting machines is this firm's automatic screw machine. The steel rod is put in at one end and in twenty seconds the well-finished screw appears at the other. One of the William Sellers universal tool grinders, as used at the Kawasaki and Mitsu Bishi Yards, is also shown. Among the other exhibits are specimens of asbestos by H. W. Johns-Manville Company, Hart duplex stock dies, Curtis & Curtis type threaders, Blickensderfer typewriters, diving suits and apparatus by James Morse & Sons, William Powell steam valves, exhibits by the Norton Emery Wheel Company, the Morris Machine Company's centrifugal pumps, and a variety of other articles which can not fail to afford interest and instruction to those even remotely concerned in engineering enterprise. In the center of the room the Colombia Phonograph Company have some of their latest phonographs.

Mr. Horne's building is very creditable. In the Foreign Samples Building he has also some exhibits, including Edward Miller lamps, Mott's sanitary goods, and Hall's safes.

AMERICAN COMPETITION IN SOUTH AFRICA.

The Central Bureau for Preparing Commercial Treaties, of Berlin, publishes the following, under date of June 15, 1903:

It has already been pointed out in the press that the impending differentiation of non-British imports to South Africa is even more severe on America than on Germany.

In the fiscal year ended June 30, 1902, America exported to South Africa goods to the value of £5,300,000 ($25,792,500). In this amount the shipments which found their way to South Africa via Portuguese harbors on the east coast were not included.

Compared with the previous year, this means an increase of exports amounting to 36.8 per cent. A considerable part of these consists, however, of agricultural products (breadstuffs and live animals), in which Great Britain does not enter as a competitor; but if all the values of this class are added together, they do not amount to quite one-third of the total exports. More than two-thirds (£3,792,259=$18,455,028) of the total exports are wares in which America appears as a competitor of England in the South African markets.

During the fiscal year 1901-2 this part alone of the American exports to South Africa increased 29.4 per cent compared with the previous year.

The following figures show the classes of goods in which American competition is especially dangerous to England.

Compared with the previous year, American exports increased as follows:

Iron goods	£108, 538=	$527, 237
Machinery, including plows, other agricultural implements, and typewriters	42, 000=	204, 393
Household goods	22, 719=	110, 562
Boots and shoes	18, 483=	89, 947
Textiles	12, 500=	61, 831

The preferential tariff on British goods to Canada was viewed with indifference by America, as it was believed that American trade in Canada could not be arrested by the preferential tariff. With South Africa, however, far distant from the United States, the case is entirely different. The tariff treatment of American imports there is of more weight for America than in Canada.

RICHARD GUENTHER,
Consul-General.

FRANKFORT, *June 17, 1903.*

COTTON-GOODS TRADE OF MANCHURIA.

Consul H. B. Miller reports from Niuchwang, China, May 28, 1903, in regard to the cotton-goods trade of Manchuria. He sends samples* of goods now being introduced into that market for the first time, and says that they are known as Ningpo native cloth and are being manufactured and handled entirely by Chinese. The company began operations about two years ago, and at present seems to be having considerable prosperity. Their place of production is at Ningpo, China, and vicinity. The cloth is made from yarns spun in Chinese mills and from imported yarns. The yarns are colored before being woven and the colors are fast and durable. The cloth is made in pieces 20 yards long and 25 inches wide. The price of these goods at Ningpo is $3 Mexican ($1.85 United States) per piece. The company furnishes the yarns to the villagers and pays them by the foot for weaving. The work is done on handlooms in the homes by women and children, whose earnings are only a few cents per day. The goods are meeting with much favor and the enterprise seems to have a most successful future. This is another substantial evidence of what China is doing in the development of cotton-goods manufacturing. These samples are evidences of their ability to produce a splendid quality of goods.

The great market for cotton goods in Manchuria is attracting the earnest attention of Russian manufacturers at Moscow. They are seeking to capture a good share of the 21,000,000 taels' ($12,180,000) worth of the cotton-goods trade that annually comes through this port and are offering most tempting inducements to merchants here to go to Moscow to purchase their supplies.

The consul further says:

Referring to my dispatch No. 157 of February 21, 1903, to the minister at Peking, in which I mentioned that a Russian agent had taken a number of merchants to Moscow to make a contract for the importation of drills imitating American products, I have to report the return of these merchants to Niuchwang. The contract, they report, fell through because the drills were not quite up to the standard of the American in quality. The color was too yellow and the parties could not fulfill their promises as to price. They therefore made no purchase of drills, but purchased other goods to the amount of 60,000 taels ($34,800), such as watches, groceries, cambrics, prints, etc.

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* The samples, together with an analysis thereof by Samuel S. Dale, editor of the Textile World Record, Boston, are on file in the Bureau of Statistics, Department of Commerce and Labor, Washington, D. C., and may be seen upon application by interested parties.

This "imitation" venture has not been a success, and it is questionable whether the enterprise will be continued.

The completion of the Siberian Railway has certainly brought a new factor into the great cotton-goods trade of North China, and American manufacturers must be alive to the situation and adjust their business arrangements to meet these new conditions if they wish to hold their trade.

The Volunteer Fleet, heavily subsidized by the Russian Government, is bringing Russian goods to North China at very low freight rates, and these goods are being entered at Port Arthur and Dalny without paying any customs duties; besides, the port charges for ships are nominal and there are no pilot charges. American goods go first to Shanghai, where customs duties and port charges, storage, and handling are paid, and are then reshipped to Niuchwang, where freight, pilotage, port, and handling charges are again paid.

These goods could be delivered direct to Dalny as cheaply as to Shanghai, if not more cheaply, and thence be distributed to Tientsin and other points in North China.

Unless it is considered useless to endeavor to hold and extend American trade in Manchuria, it is high time interested Americans were giving more earnest attention to the industrial and commercial changes now taking place in this part of the world.

Recently an official of the Department of Commerce of Russia took a prominent native banker and four young Chinese merchants with him to Russia to interest them in purchasing Russian goods.

Russia is trying to secure the trade and commerce of Manchuria. She has many traveling salesmen in this part of the world hunting for business.

A Chinaman by the name of Mang has made three trips to Russia over the Siberian Railway to purchase Russian goods, mostly cotton fabrics. He has been quite successful, and is now organizing a much larger company of Chinese to continue the enterprise.

I inclose a small line of samples of the goods he is successfully bringing from Moscow. By making these trips he has the advantage of selection from a great variety. In this class of goods the Chinese are especially desirous of variety. They do not care to purchase the same patterns twice. They want new designs each year. This is contrary to the general impression concerning Chinese taste, but it is very important. It is a knowledge of this and a catering to it that aids the Japanese in extending their trade with the Chinese. This characteristic is only true of figured or printed goods. With plain goods the reverse is true. The Chinese become accustomed to a certain "chop," or brand, and it is most difficult to get them to change.

While the Russian goods referred to are generally more expensive than American, they are making their way largely because they are fast in colors.

Contracts are made for these goods delivered at Dalny or Port Arthur, where they are entered without duty. They are brought by the subsidized Russian Volunteer Fleet.

I am advised that this fleet, bringing goods from Russia to Vladivostock, Port Arthur, and Dalny, consists of 14 steamers, with a tonnage of 38,481 tons, and is annually subsidized to the amount of 600,000 rubles ($309,000).

FRENCH COTTON CRISIS.

The high price of cotton is seriously felt in this region of France, where more of the raw product is made up than in any other part of the country. During like periods heretofore the price of the finished product corresponded with that of raw, but at present the manufacturers complain that the former remains stationary. In 1875, for example, the raw product sold, as to-day, for 90 francs ($17.37) per 100 kilograms (220.46 pounds). Comparing the two periods, we find:

Goods.	Price.				Difference.
	1875.		1903.		
	Francs.	*Cents.*	*Francs.*	*Cents.*	*Per ct.*
Cotton twist No. 28	3.36	64.8	2.40	46.3	29
Filling No. 37	3.50	67.5	2.60	50.1	26
Cloth	.40	7.7	.29	5.6	32

The principal cause of the present state of affairs is given as being due to a smaller crop than expected. Last year the mills, seeing a big crop ahead, held up to buy later. This was true not only of France, but also of Germany and England and, in general, all of the European countries.

The General Syndicate of the French cotton industry, the headquarters of which are at Paris, Rue Saint-Fiacre, and which has for its president M. Esnault-Pelterie, has addressed to the Journal de Rouen of this city the following:

> It does not seem that sufficient seriousness is given in France to the crisis through which our principal textile industry—that of cotton—is passing, and which is occasioned by the progressive advance in the price of cotton. The raw material has almost become a product of the first necessity, and the matter therefore merits special attention.

> America—which is, as everyone knows, the principal cotton-producing country—has given these last years an insufficient harvest, in spite of the increased surface planted. Does this come from a wasted soil occasioned by the continued planting of cotton, or from a combination of unfortunate circumstances? It is not easy to say. What is certain is that during the same period the consumption of cotton, far from following a like course, has increased each day, and at present, on account of insufficient supply, the cotton industry anxiously asks how it can tide itself over until the next harvest, which in all likelihood will be late and, according to those who should know, very short.
>
> How this crisis will end, it is difficult to see. It appears certain that in France, as well as elsewhere, numerous cotton mills will be compelled to shut down. In many regions of France—notably in Normandy—weavers have already begun to reduce their production. This example can only become general, especially if the price of manufactured goods does not soon follow that of the raw product.
>
> Finally, a period of high prices for all cotton products must be awaited. If the approaching harvest is better than it at present promises, its effect on the price of the raw material can be felt only after some months, during which time violent fluctuations can happen. Speculation must live; it can not renounce its habits.

The rapid increase in the number of spindles in America is not overlooked as one of the causes of present conditions. M. Pierre Baudin, ex-Minister of Public Works, says:

> The market is dominated by one fact which directly menaces the consumers and manufacturers of the Old World. It is the development of American manufactured goods. Heretofore American cotton needed us as much as we needed it, but now American spindles are using what we need. If after some years looms are multiplied sufficiently there to absorb all the twelve or fifteen million bales harvested in the United States, Europe would for the most part be compelled to close her mills.

In speaking of Europe freeing herself from this "yoke" of America, he says:

> France and Germany are pushing their colonial attempts with chances of success. The German Colonial Society equipped, in 1900, an important expedition to study the conditions of cotton culture in the territories of West Africa. Conducted by one of the most competent American specialists, the mission of Togo reported favorably. French manufacturers merit praise for founding the Colonial Cotton Association. They have raised enough money to send, as did the Germans, an expedition into our African possessions. Trials will be made in the Sudan and in the valley of the Niger. One of our well-known writers has already given the name "French Nile" to the Niger.

A forceful article on this subject appeared recently in the Reform Economique, Paris, and ended by asserting:

> We are dependent upon America for our cotton. We are dependent upon America for our woolen industry. We are dependent upon Russia for our linen industry. The list could be added to; but is it not sufficient to convince us that it is full time to take care of our economic independence?

THORNWELL HAYNES,
Consul.

ROUEN, *July 6, 1903.*

COTTON STATISTICS.

[Compiled in the Bureau of Statistics, Department of Commerce and Labor.]

Number of spindles in the world—Latest returns from various sources.

Country.	1902.	1901.	1900.	1899.	1898.	1897.
Great Britain	49,725,000	46,400,000	45,400,000	45,400,000	44,900,000	44,900,000
The Continent	33,900,000	33,000,000	33,200,000	32,500,000	31,350,000	30,350,000
Total for Europe	83,625,000	79,400,000	78,600,000	77,900,000	76,250,000	75,250,000
United States:						
North	15,150,000	15,050,000	14,590,000	14,290,000	13,900,000	13,900,000
South	6,400,000	5,819,835	4,540.515	3,987,735	3,670,290	3,456,537
Total for United States	21,550,000	20,869,835	19,130,515	18,277,735	17,570,290	17,356,537
East India	5,200,000	4,600,000	4,400,000	4,400,000	4,259,720	4,065,618
Japan	1,500,000	1,500,000	1,500,000	1,400,000	1,146,749	970,567
China	600,000	600,000	600,000	600,000	565,000	440,000
Total for Asia	7,300,000	6,700,000	6,500,000	6,400,000	5,971,469	5,476,185
Canada	775,000	640,000	640,000	638,112	632,320	560,104
Mexico	500,000	460,000	460,000	460,000	460,000	450,000
Total for Canada and Mexico	1,275,000	1,100,000	1,100,000	1,098,112	1,092,320	1,010,804
Total for the world	113,750,000	108,069,835	105,330,515	103,675,847	100,884,059	99,093,526

Consumption of cotton in the United States.

Number bales taken by Southern spinners in 1902	1,937,971
Number bales taken by Northern spinners in 1902	2,050,774
Total bales taken by United States	3,988,745

Exports of cotton from the United States.

Total exports in 1902	bales	6,763,071
Total burned in 1902	do	4,625
Total stock on hand at end of year	do	164,773

World's production and consumption of cotton, 1897–1902.

Year.	Production.				World's total production.	World's total consumption.	Surplus or deficit.
	United States.	East Indies.	Egypt.	Brazil, etc.			
	Bales.	*Bales.*	*Bales.*	*Bales.*	*Bales.*	*Bales.*	*Bales.*
1897	8,435,000	2,021,401	1,105,895	108,662	11,670,958	11,880,232	− 209,274
1898	10,890,000	1,964,523	1,229,547	60,230	14,144,300	12,888,768	+1,255,532
1899	11,078,000	2,445,829	1,098,596	176,196	14,798,621	13,997,516	+ 801,105
1900	9,137,000	1,562,000	1,228,000	250,000	12,177,000	13,859,768	−1,682,768
1901	10,218,000	2,200,205	1,063,758	150,000	13,631,963	13,402,916	+ 229,047
1902	10,380,380	2,300,000	1,225,000	245,000	14,150,380	14,351,156	− 200,776
Total	60,138,380	12,493,958	6,950,796	990.088	80,573,222	80,380,356	+ 192,866

Of the world's crop of cotton for the six years ended June 30, 1902, the United States produced 74.6 per cent. It will be noticed that for the entire six years the total production was only 192,866 bales more than the consumption.

Average prices per pound and acreage in United States, 1897–1902.

Year.	Price.	Area.
	Cents.	*Acres.*
1897	7.72	23,445,000
1898	6.22	24,319,000
1899	6.00	24,967,000
1900	8.69	24,275,000
1901	8.96	25,034,000
1902	8.75	26,802,000

STATE OF THE COTTON INDUSTRY IN CONTINENTAL EUROPE FROM REPORTS FOR APRIL, 1903.

Russia.—Reports from Moscow and Lodz state that business is not so good as last year, especially for spinners. Neither fabrics nor yarn have advanced in proportion to the advance in raw material, while the production of cotton fabrics has overtaken the demand. Producers of print goods have done better than other manufacturers. The stocks of cotton at the mills of Moscow are small, while stocks at the mills of Lodz are larger than last year. More East Indian and less American is being used.

Germany.—From the reports of the condition of the industry for the whole of Germany, it is shown that after a poor opening business has grown better, owing to the improvement in the leading branches of trade. The consumption of cotton is estimated at from 5 to 10 per cent over that of last season. Stocks of cotton at mills are somewhat larger.

Austria.—Business reported much better than last season for those spinning East Indian and the few who spin Egyptian. The only complaints come from those who spin high-class American, whose margin of profit was lost after the big advance and who are now working at an actual loss. The consumption of cotton has been up to the fullest capacity of the mills, and production has met with a ready sale. Stocks of cotton at the mills are smaller than a year ago.

Switzerland.—On the whole, the business of the current season has been unsatisfactory. This is attributed mostly to the fluctuation of American cotton. On account of this the weavers have adopted a hand-to-mouth policy, producing only as orders are filed, which places the spinner in a more unfavorable position, as he must be ready with yarn to fill quick orders. As to stocks on hand, a few are supplied to the end of the season, but others for only two or three months. On the whole, however, there is more cotton at the mills than at this time last year.

France.—Business has not been more satisfactory than was the case last season. Spinners have done better than manufacturers, having a ready sale for their yarns at small profits or without loss; but manufacturers have been less fortunate. After reducing prices to a loss, they still have accumulated stocks, owing to the slow demand from distributing buyers. The stocks of cotton at the mills are larger than at this time last year.

BRITISH AND GERMAN COTTON SUPPLY.

I select for publication, without comment, three articles—one from the London Times, one from the Daily Mail, and the third from the London correspondence of the Birmingham Daily Post. They indicate that earnest effort is being made, governmental and otherwise, both in Great Britain and Germany, to render these two countries less dependent on the United States for raw cotton.

MARSHAL HALSTEAD,
Consul.

BIRMINGHAM, *July 10, 1903.*

THE COTTON INDUSTRY OF LANCASHIRE, GERMANY, AND THE UNITED STATES.

[From the London Times, July 9, 1903.]

SIR: Mr. Macara's letter is the sort of contribution that is needed in the present discussion; he deals with specific facts and thoroughly understands his subject. I should be glad if you would allow me to make a few observations on it from the point of veiw of an outside observer who has particularly studied the conditions prevailing in the cotton industry in Lancashire, Germany, and the United States. It has a very instructive bearing on our industrial position, because it is the most important of our world-competing manufactures, and, except wool combing and spinning, it is the one in which we still retain the most decided superiority over our rivals. Further, it is one of which none of the most frequently mentioned causes of relative decline holds good. The charge of neglect brought against manufacturers does not apply to the Lancashire cotton mills; the mills themselves are as modern as any others, and the machinery is kept more up to date than anywhere else.

2. Technical education is not at fault; the Lancashire technical schools are better equipped for their work and far more largely attended than similar establishments in Germany and America.

3. The machinery for settling labor disputes is the most complete and the most successful in existence. I can not give here the evidence for these statements, but I have it. They clear the ground of a number of obstacles and permit an unusually good view of the essential position. Now, I believe that Mr. Macara is absolutely right in everything he says and that the conditions he enumerates—particularly the superior skill of the operatives—will enable Lancashire to "continue to secure a

fair share of the trade of the world" in cotton spinning, cotton weaving, and the manufacture of cotton machinery (a very important item) if—and this is the point—things go on as they are. He shrinks, and with reason, from any change which would enhance the cost of production; but he seems to me to make exactly the same mistake as many others who take the same view. He does not contemplate any other change but the proposed fiscal one in the existing conditions; he assumes that otherwise they will go on as they are, and says, "Let well alone." But, sir, I venture to say that no one that carefully studies this industry at home and abroad will admit that such an assumption can safely be made. The fact is that competition is only beginning, or, rather, it is only reaching the point at which it is beginning to be felt, and it will not stop there. Germany and America, to mention no one else, will go on in their respective ways—the one steady, deliberate, methodical, and farseeing; the other with spasmodic and adventurous leaps. The ground they have captured is nothing to what they mean to capture. They have overcome the climatic difficulties and they are acquiring the skill. As the director of the Aix la Chapelle technical school said to me the other day, "It is only a matter of time." Already they spin at Chemnitz for their hosiery and underclothing factories and at Munich-Gladbach for the 16,000 cotton looms in that district; already at New Bedford, in Massachusetts, they spin the highest counts—I have some yarn of 150 counts taken off the spindles there—while the Southern States have captured our China trade in coarse goods and are capturing the Indian; already English machinery, which was indispensable a few years ago, is disappearing from German and American mills. They make their own looms, and, though the spinning mules of Oldham, Manchester, and Bolton are still unrivaled, the American ring spinning frames are superior and becoming more and more efficient, and they mean to go on with all might.

I do not take a desponding view of British industries. Our competitors have their defects and they have their own troubles to come; our people have more natural energy and in many respects more capacity, and with a fair field they can hold their own. Perhaps they need no assistance; it would be a splendid exhibition of capacity and resource if they kept their place in spite of the handicap. I should love to see it. But will they? For the moment, yes; Mr. Macara is right. But in ten years time? The handicap is heavy. Their competitors have the following advantages: (1) Longer hours of work; (2) less State interference; (3) more State help; (4) lower wages in (parts of) Germany; (5) unrestricted child labor in the Southern States; (6) a protective tariff. Now, if our cotton industry is to keep in check the steadily advancing wave of competition, which has already passed the point where it begins to damage, either greater efforts must be made and more work put into the business, or the handicap must be reduced. For my own part I think the first alternative is greatly preferable, and I believe that Lancashire—both employers and employed—will do their honest best; but when I think of the odds against them I doubt if it will be enough.

Your obedient servant,

A. SHADWELL.

SAVILLE CLUB, *July 4*.

EMANCIPATION FROM AMERICA FOR COTTON SUPPLY.

[From the London Daily Mail of July 10, 1903.]

The Colonial Office, thanks to the active interest of Mr. Chamberlain, is strongly supporting with money and other help an effort that will make cotton "corners" impossible.

Ever since the American civil war men have preached that it is madness for us to remain solely dependent on America for our raw-cotton supplies. For a long time no one heeded them. Then last year the British Cotton Growing Association was formed, and it promises within a few years to revolutionize the situation. Its first step was to obtain experts—mostly young Americans—to go to the colonies and examine what could be done to start plantations and to watch results.

The Colonial Office agreed to pay the salaries of these experts, the association finding the men and sending the seed. Up to the present there is every promise of success on purely commercial lines.

The British Cotton Growing Association aims to raise £50,000 ($243,325) as a guaranty fund for the experiments, and already has raised the greater part of it.

GERMAN COLONIAL COTTON.

[From the London correspondence of the Birmingham Daily Post.]

I learn from Berlin that there is being sent to the Foreign Office a copy of a report that has been furnished to the German Government on the cotton-growing experiments which have been made in German West Africa. These experiments, which have extended over nearly two years, and which for the past two months have been made under the supervision of some American experts, who were specially engaged by the German Government, have proved by demonstration, I am told, that cotton and also flax might be produced in great quantities in the territories, and that only capital is wanted to make large industries out of them.

BRITISH COTTON SUPPLY.

The very interesting question to American planters, the supply of the British cotton markets with cotton other than that from the United States, India, etc., is discussed in a late number of the South African Exports. It says:

The dependence of the Lancashire mills on the Southern States of America for a supply of raw cotton will soon be greatly modified. For some time past businesslike experiments have been in progress to ascertain the possibility of growing marketable cotton in some of the central districts of Rhodesia. The results are absolute. Rhodesia will grow first-class marketable cotton from either Indian, Egyptian, American, or indigenous seed. Samples of Rhodesian cotton have been dealt with by a Liverpool cotton broker, and it has been found that they will be able to command the highest prices on the Liverpool market for white cotton. A syndicate has been formed to embark in cotton growing in Rhodesia for the British market. It is to engage in the enterprise under special advantages. The cropping of some of the varieties is continuous, and during the harvesting period of the crops there is an ample, even overwhelming, supply of native labor available on the spot. The cotton crop matures just when the native mealie crop is ending, and is ready to be picked exactly at that season when the native, having gathered his own, has nothing in particular to do. He plows after the September rains and gathers in his harvest from March till the middle of April, while the cotton ripens in May. There appears no difficulty in the way of securing a permanent African cotton supply, or in other words there is nothing to operate against the syndicate obtaining a perfect success. Of the economic value of such a market to the country we need say nothing. It is obvious.

OLIVER J. D. HUGHES,
Consul-General.

COBURG, *June 15, 1903.*

TEXTURAL PLANTS AND MACHINERY IN PARAGUAY.*

COTTON.

There is a good deal of interest throughout the country in cotton growing, and the Agricultural Bank, which is a Government institution established to encourage agriculture, has asked me to obtain prices and catalogues for cotton gins, presses, tires, baling, etc., delivered in New York or Buenos Ayres. I would be glad if manufacturers of the above articles would send immediately their prices, etc., and any other information, such as the most profitable manner of cultivating the cotton and preparing it for the market.

It is desired to obtain machinery that can be worked by animal power; also, if possible, to have machines that can be transported from different points for the purpose of collecting and preparing the cotton.

The people here would like to know what cotton is best adapted to the machinery that may be bought in the United States. To give the manufacturers a better idea of the cotton of this country, I desire to say that it grows to a very tall bush, approaching a small tree, and lasts in its production from seven to ten years. The seeds are very difficult to separate from the fiber because they stick very firmly to it. Owing to its high and extensive growth, it is also difficult to pick. Rain and frost turn it yellow. The people here would like to know whether the cotton in the United States is thus damaged; also, they wish to obtain the names of the chief dealers in American cotton seeds for the purpose of making purchases.

There is also a cotton grown in this country which is of a brownish-red color, which, owing to its natural state, never fades. This, mixed with white cotton in the form of cloth, gives a most beautiful result as well as lasting color.

CARAGUATA AND IBIRA.

There is quite a demand for machinery on the part of some owners of semimountainous land where a kind of sisal grows, the plant being called "caraguata;" also another fibrous plant called "ibira." The former grows to the height of from 4 to 5 feet, and is about 5 inches wide at the base. This plant gives a most excellent fiber for rope making. The latter plant—ibira—is much smaller, growing to 2 to 2½ feet in height, and has a strong silklike fiber that can be woven into texture or fine twine. The Indians make excellent hammocks of it.

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* For a previous report of this series, see ADVANCE SHEETS No. 1600.

I would be very glad if the manufacturers of machinery best adapted to clean this sort of plant would send catalogues and prices, giving the most favorable terms. I would also like to know whether any manufacturer would send a machine here so that the people could see it. If this were done I think quite a number could be sold.

Small transportable machinery is best adapted to this country, as these plants are distributed in large patches in the semimountainous or hilly districts.

LOOFAH.

This is a textural plant that could be exported to the United States in very large quantities, as it grows spontaneously and abundantly in the tropical regions of the country. The fruit grows to a length of from 7 to 20 inches and upward. The natives use the plants here for washing pots and plates, etc.; also for making fancy novelties in the line of baskets, and sometimes for stuffing saddles and for making hats. They are especially serviceable for bathing purposes, giving a stimulus to the skin. I believe they would be very serviceable for stuffing car seats and for other purposes where stuffing is necessary. There are at least three classes in the country—one with texture or fiber rather open, another of a closer texture but containing innumerable thin fibers, interspersed through the outer surface with an interior more compact, and the third exceedingly closely woven and more compact throughout. The latter class is the one principally cultivated.

Before shipping the loofah it is well classified as to sizes into bales, each containing from 1,000 to 4,000 plants, according to length. The plants are likewise cleaned of all the gummy substance they contain and are freed from seeds, so that they present a very neat appearance as well as good color. The planting season usually begins about September, so that the harvest may be about February.

Quite a number of the large planters inform me that they would be pleased to make shipments of loofah to any responsible concerns in the United States and allow such a portion of the proceeds of such shipments as may be agreed upon to remain as a sinking fund with which to pay for American goods purchased for Paraguay or to assist in facilitating such payment.

J. N. Ruffin,
Consul.

Asuncion, *May 19, 1903.*

PRINT GOODS IN SOUTH AFRICA.

In these days of severe trade competition, especially for the South African market, the following opinion of a celebrated expert on the subject of printed cotton goods, especially that class called "Deutsche blandruck," must, I think, be of special interest to our American manufacturers, who seem to want to capture their share of that trade:

> In examining these cloths it is impossible not to notice the discernment of the foreign manufacturer in the way he makes preparations to supply an article widely used. He goes out and ascertains on the spot the requirements of the community, observing carefully and without haste. He studies their habits and customs; watches them at their work and at their games. He notes the effect of sun, rain, and dust on their dress, and the appearance of their clothes after they have been washed a few times. In a word, he learns by observation and inquiry what these people want, and when he has gathered all the information necessary he comes home and makes the things to fit them.
>
> What does the foreign manufacturer learn from this?
>
> He learns, first, that the great bulk of the Boer women work either in the homestead, the field, or the dairy and that they need something strong, from which the mud stains or grease spots can be washed. He learns that neither sun nor rain must affect the color; that the pattern on the cloth must be neat and pleasing to the eye; and that it must not be liable to disappear the first time the garment is washed in any kind of water. He makes a cotton cloth so heavy and strong that it will wear well and wash well; he dyes it with pure indigo, that it may withstand the action of the powerful sun; he prints upon it a neat and pleasing pattern in such a way that no amount of washing can remove it or spoil the effect. He then offers it for sale in qualities, widths, and prices to suit everyone.

OLIVER J. D. HUGHES,
Consul-General.

COBURG, *June 27, 1903.*

IMITATION SILK FROM WOOD.

I have to-day seen samples of imitation silk for weaving purposes manufactured from wood. It is an English patent granted to C. H. Stearn, 47 Victoria street, Westminster, London. The rights for the United States, Germany, and France have been sold. Prince Henckel-Donnersmarck has purchased the German rights and has just completed the erection of a plant at Sydowsaue, about 5 miles from Stettin. My informant says that the plant is at present turning out 50 pounds of skein silk per day, which can be increased to a daily output of 2,000 pounds. The sample shown me was very soft and of a cream color. Each thread is made up of 18 single strands. A single strand is hardly perceptible to the naked eye.

As to the relative strength of a real silk thread and this imitation, the real silk is two-thirds stronger. It is said to take coloring or dyeing readily, and when woven into pieces has the appearance of real silk. Wood silk seems to have a great demand. I was told that within the last ten days the price jumped from 16s. to 28s. ($3.89 to $6.81) per pound. How this new artificial article compares with the genuine, in the way of wear and price, I am unable to say. It is impossible to get samples here, or information as to the process of manufacturing, excepting that no particular kind of wood is required and that the pulp undergoes a chemical process and is pressed through very fine tubes by hydraulic pressure, forming the single strands which go to make up the thread.

JOHN E. KEHL,
Consul.

STETTIN, *June 22, 1903.*

MINING IN ONTARIO.

The bureau of mines of the Ontario government has published a statement of the output of metalliferous mines and works of Ontario for the first three months of 1903, the following synopsis of which was printed in the Toronto Globe of June 20, 1903:

Product.	Quantity.	Value.
Gold ore treated....tons...	9,688	....
Gold product....ounces...	2,692	$45,218
Nickel copper ore raised....tons...	52,866	....
Ore smelted....do.....	47,880	....
Nickel in matte product....do.....	1,059	567,211
Copper in matte product....do.....	780	112,676
Copper ore raised....do.....	9,940	....
Concentrates produced....do.....	236	10,388
Iron ore raised....do.....	78,789	116,620
Ontario ore smelted....do.....	7,392	....
Foreign ore smelted....do.....	18,349	....
Pig iron produced....do.....	14,357	165,656
Steel produced....do.....	1,340	29,480
Arsenic produced....pounds...	216,000	6,264

As compared with the first three months of 1902, the total value of production shows a decrease from $1,256,685 to $1,055,513. This is chiefly accounted for by the falling off in the output of pig iron from $397,838 to $165,656, due to shutting down at the furnaces for repairs. Nickel rose in quantity from 1,485 tons to 1,659 tons and in value from $546,356 to $567,211.

Professor Miller, of the Ontario bureau of mines, who has just returned from the mining regions of eastern Ontario, states that the Canadian Corundum Company, which has been treating about 20 tons of rock daily at its plant at Craigmont, South Renfrew, is preparing to increase its capacity to 200 tons daily. This will necessitate handling 1,000 tons of rock daily, the balance, of course, being culled out. From 50 to 100 men have been employed, but this number will be considerably increased. Large extensions are also proposed at the Belmont gold mine in Hastings, which is the largest gold mine in operation in Ontario. The water-power plant of 1,000 horsepower will be increased, the sorting plant—large enough for 120 stamps—will be installed and the hoisting capacity increased. At present the plant has 30 stamps and the power is conveyed 2½ miles by means of compressed air.

M. J. BURKE,
Consul.

ST. THOMAS, ONTARIO, *June 22, 1903.*

COAL IN GERMANY.

Although the agreements of the Rhenish Westphalian Coal Syndicate are officially binding until 1905, negotiations are already under way for its reorganization on a new basis for a term of ten years from July next. The syndicate is to represent not only the collieries already incorporated, but also the nonincorporated enterprises. With the exception of the Haniel and Thyssen collieries, the negotiations have proved most successful, and it was confidently anticipated that these, too, would soon be prevailed upon to join. Strict regulations have been enforced in reference to the sinking of new shafts, and it is chiefly to these regulations that the Thyssen collieries take exception, this enterprise having a considerable undeveloped area. It is still possible that matters may be arranged satisfactorily for all the parties concerned.

As appears from an interesting report in the Berg und Huettenmaennische Zeitung, the northern boundary of these Rhenish-Westphalian coal fields is being pushed forward from year to year. At present they are bounded by an imaginary line starting in the west on the left bank of the Rhine near Buenderich and extending eastward through Schmerbeck and Hebern as far as Beckum over a distance of 105 kilometers (65.24 miles). One company is already reported to have the intention of pushing its derricks eastward in the direction of Oelde. An indication of the great activity which has prevailed until now is found in the fact that during the past three years more than 30 bore holes have been sunk outside the worked area on both sides of the Lippe and have all struck the carboniferous layers, although mostly at considerable depth. The deepest bore holes in the Lippe region are near Schermbeck (914 meters=2,999 feet), Spellen (925 meters=3,035 feet), Huemxe (938 meters=3,077 feet), and Beckum (1,012 meters=3,320 feet). Besides these a great number have been brought down to a depth of from 800 to 900 meters (2,624 to 2,786 feet). Several concessions have already been finally secured in this part and five of these have started with the sinking of shafts.

ANTHRACITE.

According to the Echo de Mines et de la Metallurgie, all the bore holes sunk in the neighborhood of Metz have proved the presence of anthracite coal. Three borings executed by the principal local parties have given the following result: The Banay boring was completed at a depth of 470 meters (1,542 feet) in the coal formation; the Raville boring—722 meters (2,369 feet) depth—went deep into the coal formation; and the boring at Lerquigny was not carried beyond the depth of 680 meters (2,231 feet), the coal stratum having been struck at the same depth as in the other bore holes, the geological features being the same. The carboniferous stratum dips under the younger formations in the direction of France and confirms a hypothesis that the Sarbruck coal measures extend toward Pont-á-Mousson. On the frontier it occurs deeper than 700 meters (2,297 feet) from the surface, but is certain to be struck at 900 meters (2,952 feet) or, at the most, 1,100 meters (3,609 feet).

COAL IN SOUTHERN RUSSIA.

While noting the German coal outlook, it would be well to observe what is being done at Riga (Russia). Its imports of coal, which were mainly from England and Westphalia and which two years ago aggregated 33,000,000 poods (532,500 tons), have now decreased by about 12,000,000 poods (193,546 tons). By order of the Government, coal is now derived exclusively from Russian mines. The local works and factories require about 20,000,000 to 30,000,000 poods (322,549 to 483,871 tons) of coal and 500,000 poods (8,065 tons) of coke per annum. Contracts are generally made in February and March for the period up to autumn and in August till spring. Petroleum residuals are rather expensive in Riga, and are only used experimentally on some locomotives on the local lines. Wood fuel is also unable to compete with coal, but is used on the small branch lines. Peat, although its deposits cover hundreds of square miles in the vicinity of Riga, finds no application whatever, because of its being comparatively expensive and inconvenient to handle.

OLIVER J. D. HUGHES,
Consul-General.

COBURG, *June 9, 1903.*

GERMAN COAL IN FRANCE.

Something akin to consternation has been caused in coal circles in this part of France by the bold and determined efforts of the Germans to capture the market for steam and forge coal. Some six or eight months ago the English and French concerns which have heretofore almost exclusively controlled the fine market of Nantes and the entire region of the Lower Loire entered into some sort of an agreement or trust by which they sought to put up prices and at the same time to continue their hold upon the business. The price of fuel coal at Nantes, in pursuance of this agreement, was at once advanced some 14 francs ($2.70) a ton, and the combine was about to put up the price of steam coal when the Germans appeared upon the scene and began to bid actively for the business at much lower prices than the French and English dealers had dreamt of. The result was that they began to get the business then, and are still getting it, much to the consternation of their French and English competitors. The greatest gain the Germans have yet scored was reached last week when they secured from the State railroad a contract for 8,000 tons of steam coal at 23 francs ($4.44) per ton delivered on board the cars at the seaport of La Palisse, near La Rochelle. The next lowest bidder was the Compagnie Charbonniere de l'Ouest, of Nantes and Paris, which handles in France the products of certain large Welsh mines. This company is reported to have bid 23.75 francs ($4.59), this being 75 centimes (14¾ cents) per ton above the German price.

As above stated, this German invasion has caused something very close to a panic in French and English coal circles, and the situation is made more serious by the fact that the German coal, which comes from the Ruhr country, has given excellent results at several large factories in Nantes and is preferred by those who have examined and used it to either the French or English coal.

It is stated that at a trial made at the manufactory of the Pilon Brothers some weeks ago 4,500 kilograms (9,900 pounds) of German steam coal gave the same results as 5,760 kilograms (12,672 pounds) of Swansea coal. It is rather the question of price than quality that is hurting the English and French dealers, and they admit that they can not, without loss, undersell the Germans at the prices now quoted by the latter. In explanation of the successful German invasion, it is freely declared at Nantes that the German coal importers are now accorded an export bounty by the German Government on coal exported to France, but as far as I can learn here there is no positive authority for this statement. It is also stated here that the purpose of the Germans is to compel the French and English, who have heretofore controlled this market, to take them into their combine and share the business at equal prices.

It was believed two years ago, when American coal began to arrive here, that a big market for that product would be created throughout this great industrial region, but after sending about 15,000 tons in 1901 and some 5,000 tons in 1902 the American exporters disappeared entirely from the market, and during the present year not a single ton of our coal has arrived at Nantes—a fact, of course, which is easily explained by the great strike in the United States.

The following table shows the imports of coal at Nantes and St. Nazaire during the years 1900–1902:

Coal.	1900.	1901.	1902.
	Tons.	*Tons.*	*Tons.*
Welsh and English	1,528,013	1,476,728	1,376,317
American		15,000	5,000
German		1,905	22,452
Belgian	1,365	300	725

BENJ. H. RIDGELY,
Consul.

NANTES, *June 25, 1903.*

MINING IN BRITISH COLUMBIA.

From the official report of the minister of mines of British Columbia, I glean the following:

For the first time since mining became an industry of the Province, the gross value of the mineral production for the year just closed is less than that of the year preceding. Various causes produced this result—among them a shortage of water supply for placer mining; a terrible explosion, which crippled the principal coal mine in the Crow's Nest region, followed by protracted strikes; and the low prices which have prevailed for copper, silver, and lead.

The following summarizes the total mineral production of the Province up to the end of 1902 and shows what amounts are credited to the various mineral products. The wealth thus created by the mineral industry amounts to the grand total of $189,728,538, of which some $86,677,415 was derived from gold—the chief product of the Province—and $58,989,572 from coal and coke, with silver and copper following next in order of importance.

Gold:	
Placer	$64, 627, 683
Lode	22, 049, 732
Silver	18, 475, 882
Lead	10, 447, 521
Copper	12, 256, 219
Coal and coke	58, 989, 572
Building stone, brick, etc	2, 800, 000
Other metals	81, 929
Total	189, 728, 538

The total production for each year since 1899 has been:

1900	$16, 344, 751
1901	20, 086, 780
1902	17, 486, 550

The next table gives a statement in detail of the quantity and value of the different mineral products for the years 1901 and 1902. Statistics regarding building stone, lime, bricks, tiles, etc., are estimated.

Description.	1901.		1902.		Increase.	Decrease.
	Quantity.	Value.	Quantity.	Value.		
Gold:					*Per cent.*	*Per cent.*
Placer ....ounces	48,505	$970,100	53,657	$1,073,140	10.4	
Lode ....do	210,384	4,348,603	236,491	4,888,269	12.4	
Silver ....do	5,151,333	2,884,745	3,917,917	1,941,328		32.7
Copper ....pounds	27,603,746	4,446,963	29,636,057	3,446,673		25
Lead ....do	51,582,906	2,002,733	22,536,381	824,832		58.8
Coal ....tons	1,460,331	4,380,993	1,397,394	4,192,182		4.3
Coke ....do	127,081	635,405	128,015	640,075	.7	
Other materials		417,238		480,051	15	
Total		20,086,780		17,486,550		

The copper production shows a decrease in value, on account of the low market price of the metal during the year. In the quantity of fine copper produced, however, the year 1902 really shows an increase of 7.4 per cent over the previous year.

The minerals produced by the different districts of the Province during the past three years were:

District.	1900.	1901.	1902.
Cariboo	$684,527	$538,700	$540,305
Cassiar	467,479	322,949	426,636
East Kootenai	2,855,851	2,746,839	1,477,466
West Kootenai	6,020,783	8,159,662	7,806,399
Lillooet	88,493	48,383	31,499
Yale	1,422,465	3,327,686	2,843,537
Coast (Victoria, Nanaimo, Alberni, West Coast, and Vancouver Island)	4,805,153	4,952,561	4,360,688
Total	16,344,751	20,086,780	17,486,550

The following table shows the number of mines in each district that shipped ore during the year 1902 (not including coal mines), with the number of men employed:

District.	Number of mines shipping.	Number of mines shipping over 100 tons in 1902.	Men employed in these mines.		
			Under-ground.	Above ground.	Total.
Cariboo	1		3	2	5
Cassiar	1	1	8	10	18
East Kootenai:					
Fort Steele	1	1	30	17	47
Other divisions	4	1	23	8	31
West Kootenai:					
Ainsworth	12	5	75	44	119
Nelson	14	10	246	170	416
Slocan	40	25	476	161	637
Trail	10	8	710	281	991
Others	9	2	80	39	119
Lillooet	4	1	12	17	29
Yale:					
Grand Forks, Kettle River, and Osoyoos	18	13	373	234	607
Yale-Ashcroft-Kamloops	2	1	24	11	35
Coast	8	7	159	132	291
Total	124	75	2,219	1,126	3,345

Returns have been secured from 44 nonshipping mines, and these employed a total of 342 men—158 above ground and 184 below—making the total number of men employed in the mines of the Province, as so far reported: Below ground, 2,403; above ground, 1,284; total, 3,687.

The combined placer and lode gold output of the Province for 1902 reached a total value of $5,961,409, the highest yet made, being an increase over 1901 of $642,706, or about 12 per cent.

The coal-mining industry shows no appreciable decrease. The gross output of coal for 1902 was 1,641,626 tons, of which 244,232 tons were converted into coke, leaving a net output of 1,397,394 tons of coal and 128,015 tons of coke, a slight decrease in the coal output and a slight increase in the coke production as compared with 1901. Of this net output, Vancouver Island collieries produced 1,173,893 tons of coal and 20,178 tons of coke, a decrease of 87,851 tons of coal and an increase of 4,780 tons of coke compared with the previous year.

Iron ore has been mined on the coast during the past year, but the only shipments made have been from Texada Island, from which some 6,290 tons of magnetic-iron ore—running over 50 per cent iron—were sent to the iron furnace at Irondale, Wash. From the iron mines at Cherry Creek, near Kamloops, some 3,727 tons of magnetite were shipped to Nelson for use there in the smelter as a flux.

There was some $190 worth of platinum produced from the Similkameen district this past year. This is the only locality where the metal is saved.

ABRAHAM E. SMITH,
Consul.

VICTORIA, *June 8, 1903.*

NEW CONTROLLER OF BOILER WATER.

As several inquiries have of late reached this office (Rotterdam) from the United States on the subject of machinery to prevent incrustation of boilers, I think that a description of a comparatively recently invented apparatus, which is used largely on Dutch steamers and in Dutch factories, where carbonate of soda is added to the water to prevent incrustation, will be of interest.

My attention was called to the apparatus by Messrs. Van der Laan & Co., owners of the American showrooms of this city, who have also provided me with the data for the description. The apparatus in question, the "Erfmann boiler-water controller," controls the composition of the boiler water and indicates the amount of carbonate of soda to be added to it.

As will be seen from the accompanying cuts, the apparatus consists of two graduated vessels, marked, respectively, 1 and 2 (fig. 1, with a pipette or inner tube), and a base containing a filter. These are fitted in a case (fig. 2) as shown in the cut. The case also contains three drop bottles (two for chemicals and one for boiler water), a box of filter papers, and a cleaning brush, compactly fitted for use under any conditions and especially handy for use on steamships.

On opening the case the directions for use are found inside of the cover. By following these failure is said to be impossible. The base of the apparatus slides into two dovetail catches and is easily removable. All the other parts are provided with proper receptacles to insure safety and to minimize the risk of breakage.

Bottle 1 contains a yellow liquid and bottle 2 a colorless liquid. The bottles are made in such a way that the flow of liquid can be regulated to a nicety by the finger tip on the air inlet.

To operate the apparatus one has only to observe the directions, as follows:

Place a piece of filter paper in the filter (above the perforated plate, to avoid tearing). Vessel 1 is then placed in position, with cock closed, and filled to mark *A* with hot water taken from the boiler. The yellow liquid is then added to the height of mark *B* and the contents shaken to mix them properly. Next, vessel 2 is

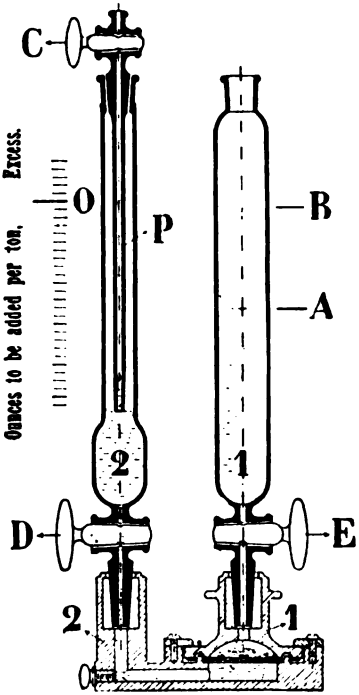

FIG. 1.—CONTROLLING APPARATUS.

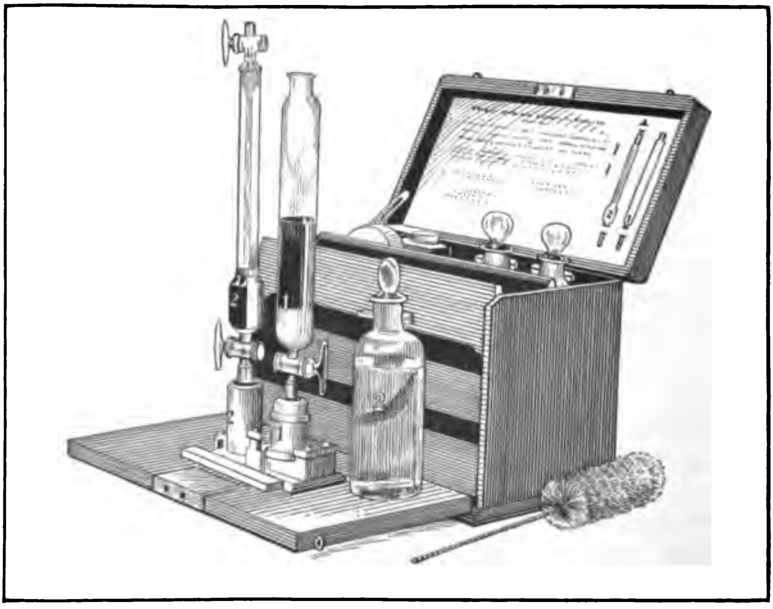

FIG. 2.—CASE CONTAINING APPARATUS, DROP BOTTLES, ETC.

placed in position, with inner tube *P* inserted, whereupon all cocks are opened. The liquid in vessel 1 (which has become thick) passes through the filter and rises into vessel 2 in a clear state. Only a certain quantity can rise, and, as it would be unsatisfactory to leave this to the manipulator, the pipette, or inner tube *P*, is used to obtain the exact quantity. When the fluid has reached the maximum level in vessel 2 (that is, when it has risen in the pipette *P*), all the cocks are closed and the pipette and its contents removed. The remainder is the proper quantity for testing.

Take vessel 2 and from bottle 2 add the colorless liquid drop by drop until a change of color from yellow to red is observed. When the vessel is shaken this red tinge will disappear. The process of adding drops should, however, be continued until the red tinge remains permanent after shaking the mixture.

Result.—The level at which the reddish fluid stands indicates, on the graduated scale, as follows:

A. By the number of degrees (or lines) below zero the quantity in ounces of soda ash required to be added daily for each ton of boiler capacity, each line indicating 1 ounce per ton.

B. By the number of degrees above zero the presence already of an excess of soda. In this event the quantity of soda added daily must be decreased accordingly.

C. If the level stands at zero, then the water is not corrosive or liable to cause incrustration and the daily additions are correct in quantity. By boiler capacity is understood the normal quantity of water that is always kept in the boiler.

How to add the soda.—The first time the boiler water is tested or examined, it naturally contains a great deal in the shape of harmful elements, especially if the boiler has been in use for a long period. If when tested the controller indicates 5 ounces per ton (which means that the boiler water is of a bad nature), then, if dealing with a boiler which holds 16 tons of water, it is necessary to put into the boiler at once 16 times 5 ounces (5 pounds) of soda. This will make the water in the boiler harmless.

When the boiler is fed continuously it may, upon testing, be found the following day that a need for 4 ounces per ton is indicated, which means that since the 5 pounds were added such a quantity of impure elements has entered the boiler that 16 times 4 ounces (4 pounds) of soda is required to neutralize them. Then 4 pounds is added at once; and as new water is being fed, another 4 pounds should be added during the time the boiler is in use that day. The latter quantity, however, should be dissolved in a tank or bucket to enable the boiler to take it up during the working-day. If on the third day the controller indicates zero the adding of 4 pounds of soda per working-day may be continued and it will after that be sufficient to test the boiler water once or twice a week.

As stated before, the quantity of carbonate of soda required for one workday is dissolved in a small tank or bucket, which can be connected by means of a cock and tube to the feed-pump suction pipe, as shown at *A* (fig. 3), regulating it in such a way that it will take up the contents of the tank gradually during the time the boiler is in use each day. When several boilers used for different purposes are fed by one pump, then the soda must be added direct to each boiler. This may be done by means of a soda cup, as in *B*. The soda cup may, however, be placed right on the boiler *C*.

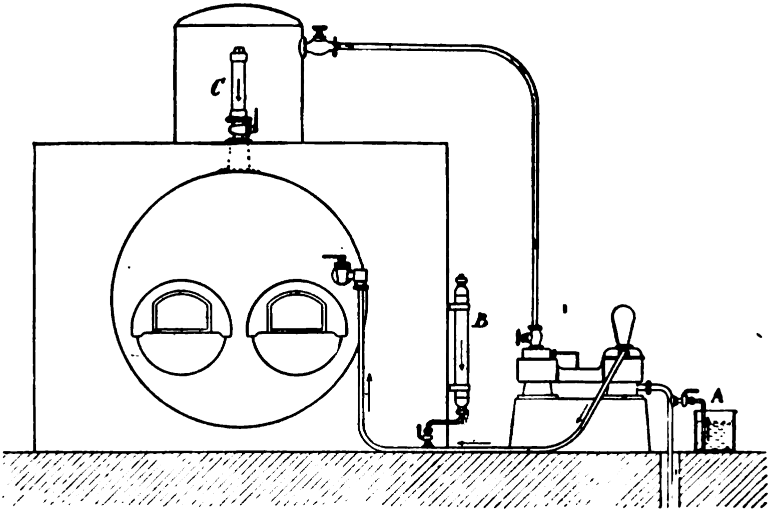

FIG. 3.—BOILER, WITH APPARATUS ATTACHED.

How to blow off effectively.—The soda ash having caused the impurities to sink to the bottom of the boiler in the form of a soft mud, this may be removed by occasionally blowing off. This should be done when the boiler is not in use—for instance, in the morning before firing up, and even then with the blow of the cock only just opened. It is not necessary to blow off longer than is required to lower the water level about 2 inches, and it is useless to blow off under high pressure, as the water circulation would keep the mud stirring and only a small portion of it would be removed. Seagoing steamers can therefore only rarely blow off; but, owing to the use of condensers, the boilers on such steamers do not require it so frequently. In their case corrosion is feared more than incrustation.

It is claimed that the apparatus is a remarkable labor saver, and the fact that the Holland-America Steamship Company, of this city, used to employ 30 men to clean out the boilers after every home trip of one of their steamers across the Atlantic, besides laying up their steamers once in three years for two months for a thorough cleaning out, while at present, with the aid of the apparatus described, the boilers are cleaned out by means of a hose in a couple of hours, seems to warrant the claim.

S. Listoe,
Consul-General.

Rotterdam, *June 16, 1903.*

NEW INVENTIONS.

Prevention of the warping of xylolithe floors.—An Austrian inventor claims to have discovered a method of preventing the warping of floors constructed of xylolithe (a mixture of sawdust, burnt magnesite, and magnesium chloride). He does this by fixing sheet-iron, open-work, or reticulated plates to the foundation and embedding them in the plastic material. For covering iron floors in ships, etc., the reticulated plates are laid loosely on the foundation and a series of crosscuts are made in the partially hardened xylolithe covering by thin knife blades to allow for expansion.

Plastic flooring.—A German invention deals with the manufacture of plastic compositions for flooring purposes. Ash, moistened with a solution of sulphate and chloride of magnesium, is mixed with kaolin, or clay, and talc; gypsum and magnesite are then added. The mixture is stamped and rolled in place while cool to form the bed or foundation of a jointless floor. When the bed has hardened, a surface layer composed of asbestos and sawdust moistened with magnesium, sulphate, and chloride and mixed with kaolin, or clay, and talc, gypsum, and magnesite is applied.

Cylindrical blank piercing.—As outlined in a recent German invention, a tube or other hollow body is formed from a cylindrical blank by piercing it with a pointed mandrel while the blank is held in a divided matrix, or die. The blank is first held endwise by a block and wedge arrangement until the mandrel has penetrated sufficiently to force some of the hot metal into cavities in the matrix. The swellings thus produced serve to hold the blank in place, after the block and wedge have been removed, till it has been completely pierced. The tube produced is considerably longer than the blank, and therefore a relatively longer mandrel has to be used. The swellings are removed by subsequent rolling or drawing.

Seamless pipes and tubes.—In another German invention, relating to the manufacture of seamless pipes and tubes, a set of nested tubular blanks is rolled or drawn on a mandrel so that tubes of various diameters are simultaneously produced. Each blank just fits into the surrounding one, the inner blank fitting the mandrel, and each blank is given a protective coating, which may consist of milk of lime or a mixture of graphite and coal to prevent a grinding or welding together of the blanks during reduction.

Fuel grating.—A casing which is interposed between the wall and the fire bars of an inclined grate to increase the draft forms the subject of a recently issued German patent. The casing comprises a frame—preferably made in two sections—secured to the walls by lugs in such a manner that the part nearest to the inclined fire bars is easily replaced. The frame holds the downward extended plates together by means of bridge pieces, and the upper surfaces of the frame and the plates slope down from the walls to the fire bars to keep the fuel in the middle as it slides down the grate.

Self-ignition for internal-combustion motors.—A French patent has been taken out by the De Dion-Bouton firm on a self-ignition device for internal-combustion motors. A small cylinder is fastened to the side of the working cylinder with an opening connecting the two. The piston of the small cylinder reciprocates at one-half the rate of that of the larger one; that is, for two strokes of the main piston the auxiliary piston makes one stroke. An explosive mixture is drawn into the small cylinder on its down stroke and this is compressed to such a degree on the up stroke that it spontaneously ignites and fires the charge in the working cylinder, the flame communicating by the opening referred to.

Punching and shearing machine.—A somewhat novel design of a punching and shearing machine has been put on the market by a German firm. The feature which distinguishes it from other designs is that it is cut away longitudinally on one side to allow of a broad plate being cut up the middle. It will be worth a great deal in shipyards and bridge works, for in such works plates are usually ordered in the dimensions required, and they only require a little cutting and trimming around the edges. It can hardly fail to vibrate considerably while at work. In all other respects the machine resembles other well-known makes of eccentric machines. It is made to shear plates up to 1 inch in thickness, and the shears are in a line with the longitudinal axis of the machine. The gap on the punching side is only 19½ inches, and it is intended to punch 1⅛-inch holes through 1-inch plate. The angle-iron shear in the middle has the corner down, and is thus quite unsuitable for shipbuilders.

OLIVER J. D. HUGHES,
Consul-General.

COBURG, *June 23, 1903.*

NEW ILLUMINATING MATERIAL DISCOVERED.

An important discovery has been made by the well-known German chemist Hermann Blau, of Bavaria. His method is to separate, by a process of rectification, the methane and hydrogen from the other constituents of oil gas, collecting the same in steel receivers subject to a pressure of 40 atmospheres, whereby he converts it into liquid form.

A comparison of the cost of the various illuminating materials is shown in a table drawn up by Fischer in his Chemical Manual (1900):

Per 100 heat units—	Cost.	
With petroleum burners:	*Pfennigs.*	*Cents.*
Flat	13.2	3.14
Round	7.3	1.73
With incandescent alcohol	9.1	2.16
With coal gas	4.5	1.06
With electricity	27.3	6.49
With acetylene	9 to 16	2.14 to 3.81

With the liquid gas made according to Blau's method, the cost is reduced to 6.3 pfennigs (1.5 cents), including freight.

As seen from the above table, this new illuminating material compares very favorably in cost with all others. The ease with which it can be handled and the beauty of its light should make it preferable where a lighting material is wanted as a substitute for petroleum, alcohol, or acetylene.

As Blau's light is much more easily turned on or off, it is certainly more convenient. Its low cost and its beautiful color may give it preference even to the electric light. It will undoubtedly open a new field of industry and should be promptly looked into as an enterprise and investment for Americans.

On the 24th of December, 1902, a test was had for the first time to produce the liquid gas. The trial showed how practical and very simple the process of preparation was. It has since been decided to erect an oil-gas furnace and to reconstruct the rectifying apparatus in accordance with the practical observations obtained by the experiments of last December.

A new test has recently been made and shows a most marked improvement and a remarkable productive power in every respect. It was also found that by the addition of a considerable amount of tar, which is in no wise detrimental, a beautiful yellow color was given to the gas.

A test tube filled with the liquid gas needed only the warmth of the hand to cause it to effervesce. It also effervesced when poured upon a metallic plate and on water. In the latter case a crust of ice was formed.

Its odor is pyroligneous aromatic. The concentration amounted to 537 grams instead of 550 grams per liter under a pressure of 40 atmospheres. The specific gravity, when in a gaseous state, was 1.26 (taking air at 1.0); absolute weight, 1.03.

The trial whose result was so satisfactory was carried out in the Holshaeuerschen (Maschinenfabrik) Machine Works of Bavaria, built for the apparatus and which are now backing the project.

JAMES H. WORMAN,
Consul-General.

MUNICH, *June 13, 1903.*

AUTOMATIC COUPLERS.

It is reported from England that a new form of automatic coupling for railway carriages and wagons has been invented. It consists of two horizontally placed hooks, one above the other, facing in opposite directions. Coupling is effected, on the cars coming together, by the hooks automatically swinging open sufficiently to enable them to clasp. Cars are doubly held together by the two sets of hooks, and it is practically impossible for them to part unless interfered with, for in the event of one breaking the other would hold. Provision is made for allowing the hooks a considerable range of motion to enable them to travel comfortably over short curves. As they face in opposite directions, the movement which might conceivably pull one set asunder would only serve to tighten the grip of the second set of hooks. The carriages or wagons are uncoupled by pulling a lever from the side of the car.

OLIVER J. D. HUGHES,
Consul-General.

COBURG, *June 25, 1903.*

PRESERVATION OF EGGS.

German papers state that it is possible to keep eggs fresh for any length of time by simply immersing them in a 10 per cent solution of silicate of soda, commonly called "liquid glass." This produces the formation of a coating which renders the eggs perfectly air-tight. The eggs so treated retain their fresh taste for many months. The best proof of the efficacy of this treatment has been furnished by the fact that such eggs, after having been kept for a whole year, were hatched, and the chickens were strong and healthy.

The preserving solution is best prepared by dissolving 1 pound of liquid glass in 4 quarts of cold water. The eggs are then immersed in this solution, which should be kept in a glazed earthenware vessel, where they are kept for a short time. If one of these preserved eggs is to be boiled, the shell must be first perforated in order to prevent cracking.

RICHARD GUENTHER,
Consul-General.

FRANKFORT, *June 19, 1903.*

GERMAN METHOD OF DRYING WOOD.

It is generally supposed that wood which has been for some length of time in a drying room, exposed to a heat of from 50° to 60° C. (122° to 140° F.), is perfectly dry and fit for use without there being any fear that it will shrink, split, or bend; but this supposition is not always correct, as even an expert woodworker may be mistaken as to whether it is perfectly dry or not, unless he knows the exact treatment the wood has received from the time when it was felled in the forest until it left the drying room.

So far it is a little-known fact that wood which has been floated in rafts or otherwise gives a more reliable joinery and building material than that which has been carried by cart or rail to the sawmill and workshop. While the wood is lying in the water its sap and albuminous and salty substances are—owing to the diffusing effect exercised by the water—dissolved and come out of the pores, the water taking their places. This dissolving process, quite similar to that which takes place during the manufacture of sugar out of cane or beets, will progress more slowly at the ordinary temperature of river water—*i. e.*, at from 12° to 18° C. (52° to 65° F.)—than it would at a higher temperature, but the length of time rafts in Germany usually spend on their journey down rivers is entirely sufficient for this process to take place, even at an unfavorable temperature.

The salty and other substances in the wood, like albumen and wood gum, are hygroscopic—*i. e.*, they eagerly absorb the dampness in the atmosphere, so that apparently wood which has been kept in drying rooms for a sufficient length of time is apt to become damp again in the open air unless it has, when floating down the river, gone through the above-mentioned diffusing or washing-out process.

With the better qualities of wood a secretion of the hygroscopic substances is brought about artificially in our local drying establishments with the help of a special apparatus. The boards or planks are piled up in a long iron box, with narrow spaces between; the lid is then tightly screwed down, so that neither water nor steam can escape. Steam is then turned into the box at a continuous pressure of 0.2 or 0.3 atmospheres, and this process is continued for from sixty to seventy-two hours, the exact length of time being determined by the hardness and density of the wood. The steam opens up the wood and kills the protoplasm which is still alive in the cells. After having been thus prepared the wood goes into a water bath, where it is kept for about a fortnight.

The drying process, as practiced here, is about as follows: The boards are loaded on a small cart, leaving small spaces between them by placing narrow strips in position. The cart is then pushed into the first drying room. The size of these rooms differs a good deal; they are mostly from 20 to 30 meters (66.45 to 84.25 feet) long, with breadth and height to correspond. The temperature is kept between 50° and 60° C. (122° and 140° F.). Steam or hot-water pipes placed on one side and underneath the flooring supply the necessary heat, fresh air being admitted from one side by openings which can be wholly or partially closed by means of slides. At times, when the fresh air does not enter fast enough, exhausters and ventilators are employed. The air, after becoming heated and passing between the layers of wood, becomes saturated with its moisture and is then forced out at the other side of the room by numerous openings or a long slit connected with the outer air by openings leading to the roof.

In most establishments the wood, after having been in the first heating room for a sufficient length of time, is taken right into the workshop. This, however, is not the best method; it is better to have the first drying process followed by a second one in another drying room, which is heated by means of a stove extending its whole breadth, provided with fuel—usually coke—from the outside. The process is then about the following: Each board or plank that comes from drying room No. 1 is given an exact rectangular shape at one end; it is then loaded on a cart and put into the second drying room, after which the door is closed and any loose places that may become noticeable are filled up with mortar. The fire is then started and brought to a red heat, plenty of air being allowed to pass over the fuel, while the smoke is carried off by regulating outlets, which are provided underneath and beside the cart. After from fifty to sixty hours the cart is taken out and each piece of wood carefully examined as to whether it has kept the exact rectangular shape with which it was provided before being put into the heating room. Those pieces which have kept their shape may be considered as quite dry and ready for use, while the others will be once more cut rectangular at one end and put again into heating room No. 2. On being withdrawn, after about twelve or eighteen hours, every angle is as it should be—consequently quite dry and in perfect condition for use. Many manufacturers are afraid of the expense and loss of time in connection with this double-drying process as described above, and so they use wood which has been less carefully treated. The natural consequence of this omission is that furniture, etc., manufactured by them will split or bend very soon after having been put to use.

Finally, it must not be forgotten that wood which before being dried has been floated, and thus gone through the wash-out (Auslaugung) process referred to at the beginning of this article, makes very useful timber, as it is less liable than nonfloated wood to be attacked by microorganisms, the reason for this being that the washed-out (ausgelaugte) wood consists almost exclusively of cellulose and liquose, on neither of which do mold or bacteriæ thrive. Such timber will require but a slight saturation with an antiseptic solution to become safe from putrefaction and destruction through fungi.

OLIVER J. D. HUGHES,
Consul-General.

COBURG, *June 12, 1903.*

ALCOHOL FROM ACETYLENE.

I have received a number of letters requesting me to furnish some details touching upon the methods of the manufacture of alcohol from acetylene, referred to in a report from this consulate dated March 10, 1903.* I am informed that a Paris savant, Mr. Berthelet, succeeded in obtaining ethylic alcohol from acetylene in 1860, but as at that time the Cowles electric furnace, which is now used in producing acetylene, had not been invented, the basic material was so expensive that the discovery attracted but little attention. A chemist of whom I asked information on this subject said to me:

> Alcohol differs but very little chemically from acetylene and ethylic differs from acetylene only by an excess of hydrogen and oxygen, acetylene being composed of carbon, oxygen, and hydrogen. In his first experiments Mr. Berthelet produced acetylene, then combined it with a certain quantity of hydrogen to get the ethylene, and brought sulphuric acid to act upon the latter. He thus procured sulphorinic acid, which, well watered and boiled, produced alcohol.

A well-known chemist tells me that since the invention of the electric furnace by Eugene and Alfred Cowles it is probable that carbure of calcium can be produced so cheaply as to greatly reduce the price of alcohol. At present carbure of calcium is sold in France for 150 francs ($28.95) a ton, from which can be produced 350 kilograms (770 pounds) of acetylene—equal to 800 liters (about 211.4 gallons) of alcohol of 90°. Therefore, alcohol obtained by this method would cost about $4 per hectoliter (26.417 gallons); counting the waste and incidental expenses, it is believed that industrial alcohol made from acetylene would cost not less than $6 per hectoliter. Mr. George Claude, of Paris, a specialist in this line, calculates the price at $7 per hectoliter.

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*Printed in ADVANCE SHEETS No. 1611 (April 3, 1903) and in CONSULAR REPORTS No. 273 (June, 1903), page 221.

Many experiments are being made in this field. It is proposed to use carbure of barium instead of acetylene, but this is still in the domain of speculation and nothing positive can be said of it.

JOHN C. COVERT,
Consul.

LYONS, *July 2, 1903.*

FERROSILICON IN FRANCE.*

Ferrosilicon manufactured by electrical process is now being shipped regularly in commercial and rapidly increasing quantities from France to the United States. It is being forwarded both from Grenoble, the shipping point nearest the place of manufacture, and Marseilles. During the year ended June 30, 1903, the exports from Marseilles amounted in value to $33,242, as compared with $196 in 1892, and there are evidences of an increasing demand and capacity to satisfy that demand. The concerns principally interested as manufacturers in this enterprise are the Compagnie Electrothermique (Keller, Leleux & Co.), 3 Rue Vignon, Paris (works at Livret-et-Gavet, Isère); the Compagnie Générale de l'Electro-Chinie, Bozel, Savoie; and the Société Electro-Chimique de la Romonche, Livret-et-Gavet, Isère. The rapid development of this industry has been enveloped in all the mystery compatible with the marketing of the product. The shipments of the material are made by middlemen, who, not unreasonably, desire to retain as their own property such facts as may be called trade secrets.

In the French Alps the work of damming streams for the [illegible]ation of electricity has been going on for about four years with feverish activity, and a region hitherto without important manufacturing enterprises bids fair to become a great producing center. The engineers in charge feel that they have within their grasp a knowledge of electro-metallurgy which must sooner or later free the country from its dependence on coal.

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*This report was made at the request of the Iron Trade Review, of Cleveland, Ohio, to which an advance copy has been mailed.

The first satisfactory discussion of the subject of ferrosilicon in France was made in May before the Iron and Steel Institute in London by M. Albert Keller. M. Keller is a graduate of the National School of Arts and Crafts at Angers, and under his direction electrical power has been installed in twelve electro-metallurgical works. He has devised improvements in the manufacture of carbide of calcium and has invented a process for the electrical treatment of iron ore and iron and steel waste. It will be surprising, indeed, if, with full knowledge of the work being done in France, the United States remains long behind in the competition for supremacy in the adaptation of electricity to metallurgical furnaces.

M. Keller's paper (printed in the Ironmonger) is inclosed herewith.

ROBERT P. SKINNER,
Consul-General.

MARSEILLES, *July 9, 1903.*

THE ELECTRO-METALLURGY OF SILICON.

Silicon, on account of its character as a thermal, chemical, and mechanical agent in the metallurgy of iron and steel, forms as much a part of the groundwork of metallurgy as manganese, and with the commencement of the manufacture of ferrosilicon in the electric furnace the latter may be said to have achieved its entry into the domain of metallurgy, in which the success of its application has deservedly secured a lasting place for it. It had as a rival the blast furnace, in which ferrosilicon containing 10 to 15 per cent could be blown without difficulty when working very hot, notwithstanding which fact the electric furnace could readily enter into competition with it owing to the higher temperature attainable. The electric furnace, even when working at moderate temperatures, can produce without difficulty alloys richer in silicon than those yielded by any blast furnace, and it was by these means that ferrosilicon containing from 25 to 80 per cent silicon was first brought out.

The process of finding a market for the ferrosilicon manufactured in the electric furnace was at first rather slow. The products as supplied at the beginning were very impure, so that even the most favorably disposed users were at first discouraged. Taking into consideration, moreover, that the introduction of any new system or product is, generally speaking, always a matter of extreme difficulty, it will not be surprising to learn that in the past three years it was only during the last one that the advantages of high-grade ferrosilicon began to be appreciated. The use of it has now, however, so far extended that at the present time 30 and 50 per cent ferrosilicons are commonly employed in foundries and steel works; and it may be said that in competing with low-grade ferrosilicon the only question is now one of comparative economy, since metallurgists naturally prefer the product which provides them with silicon at the cheapest rate per unit delivered at their works, not omitting, however, to take into account the value of the iron contained in the alloy. That the electro ferrosilicon can compete successfully with blast-furnace ferrosilicon is proved by the simple fact that the sale of the former of these products has now assumed very considerable proportions.

Formerly high-grade ferrosilicons labored under various disadvantages, partly on account of their lower density and of the ease with which they were oxidized in the bath of metal compared to 10 or 15 per cent ferrosilicon, and partly on account of the fact that their melting point differs slightly from that of the low-grade alloy.

ADVANTAGES OF HIGH-GRADE FERROSILICON.

In enumerating the following advantages attending the use of high-grade ferrosilicon, the author entertains no doubt that a discussion will prove highly useful in bringing to light new points of interest bearing upon its application in the manufacture of iron and steel.

1. Purity.—The decree of purity attainable in the electric furnace in making high-grade ferrosilicon is particularly noteworthy. In fact, generally speaking, the higher the content of silicon in the alloy the greater is its purity. This will be readily understood when it is considered that the increased percentage is obtained by using a larger quantity of silica and of reducing carbon without increasing the iron, the latter being just that constituent which introduces all the impurities subsequently found in the alloy. Besides this, for two given qualities of ferrosilicon, one containing 12 per cent and the other 50 per cent silicon, and each containing an equal amount of impurities, the percentage of impurities introduced into the bath of metal per unit of silicon is four times less in the case of the rich alloy than in that of the poor one. Finally, the manufacture of high-grade ferrosilicon necessitates a more powerful and prolonged calorific action, which aids the expulsion of impurities, either by volatilization or by secondary reactions.

The following is the current analysis obtained by the author for 50 per cent ferrosilicon:

Phosphorus	0.02
Sulphur	Trace.
Carbon	Trace.

2. Economic advantages.—In the manufacture of high-grade ferrosilicon on a large scale, the higher the proportion of silicon in the product the lower is the cost of production per unit of silicon. This is explained by the fact that the iron, which is the most important item influencing the cost price of low-grade alloys, becomes of much less account in the case of a high grade, the chief constituent being then the silicon, which is very cheap. Again, in adding ferrosilicon to a bath of metal, the cooling effect is proportionately less the smaller the mass to be added, which is a further argument in favor of the high-grade alloy. It is probable that in view of the increasing favor with which metallurgists regard the use of high-grade ferrosilicon, the time is at hand when silicon will be employed in no other form than that of the rich alloy, in the same manner as manganese is now used.

The question then arises: Is it possible, in substituting high-grade ferrosilicon for the poorer alloy, to meet the entire demand for silicon; or, in other words, (*a*) Can the electric furnace attain an output sufficient to meet the whole demand? or, (*b*) Can the electric process of manufacture sustain a successful rivalry against the blast furnace with regard to the price of production per unit of silicon?

To these questions the obvious answer is that if the present consumption exceeds the amount now manufactured by thermo-electric methods, this new industry is nevertheless susceptible of such rapid extension that it would soon be able to secure the whole market for silicon by lowering considerably the present current market value. In demonstration of this, it may be stated that the results of working have shown that the energy required for the production of 1 ton of 30 per cent ferrosilicon amounts to 3,500 kilowatt hours. A hydro-electric works developing 10,000 effective horsepower upon the shaft of the turbines would therefore be capable of producing 16,000 tons of 30 per cent ferrosilicon annually or nearly 30 tons per day. These figures are well within the range of possibilities, seeing that even now in Europe, and notably in France, several hydro-electric stations are in existence of a higher aggregate power than the above.

The works at Livet, in the Department of Isère, where the thermo-electric firm of Keller, Leleux & Co. is engaged in the manufacture of high-grade ferrosilicon by their own processes, have an available source of 15,000 horsepower. The author has recently inaugurated the process of manufacture at Livet which the same company formerly carried on at a smaller works, and he has found that with 4,000 horsepower applied to this particular process it is possible to turn out 20 tons of 30 per cent ferrosilicon per day. The works are also equally well adapted for manufacturing higher grades than this, and with the existing apparatus any required percentage in the product is obtainable. Up to the present time the highest grades which have been made contain 75 to 80 per cent silicon.

THE MANUFACTURE OF FERROSILICON BY ELECTRICITY.

The manufacture of ferrosilicon can only be carried on with real economy in a large installation consisting of powerful electric furnaces. Those at the Livet Works are of 650 horsepower each. The raw materials employed are preferably quartz, scrap iron, and coke. Quartz is more suitable than sand, since the latter is often productive of obstructions in the furnace. Scrap iron and steel are to be preferred to iron ore, for the reason that, together with a pure quartz, the working proceeds without the formation of any appreciable quantity of slag. The purity of the product depends, therefore, entirely upon the care bestowed on the equipment of the works. The furnaces employed are of the resistance type.

The author does not propose to discuss here the details governing the cost of production of ferrosilicon in the electric furnace, but he can confidently predict that the lower selling price will shortly secure for the ferrosilicon produced by the electric method a preponderance in the market.

As the use of high-grade ferrosilicon becomes more general, the demand for electro ferrosilicon will increase; for, as already mentioned, the cost of production per unit of silicon is lower the higher the content of silicon in the finished product. For the manufacture of 1 ton of 10 to 15 per cent ferrosilicon in the blast furnace, as much as 3 tons of coke are requisite, owing to the hot working and to the refractory nature of the slags. The process is thereby at once rendered too costly to compete on a large scale with the electrically produced ferrosilicon. If the additional cost of transport per unit of silicon in the case of alloys poor in silicon is considered, it may be concluded that the use of rich ferrosilicon is likely to be adopted, if solely for reasons of economy. The future of the electric furnace as applied to the metallurgical preparation of this alloy is therefore assured beyond question, and. for the reasons above mentioned, the development of the industry is likely to assume considerable proportions at no distant date.

GALALITH, OR MILK-STONE, MANUFACTURES.

At the Hygienic Milk Supply (Hygienische Milchversorgung) Exhibition, which was lately held at Hamburg, the Vereinigten Gummiwaren-Fabriken, of Harburg and Vienna, exhibited a number of objects which seemingly had nothing whatsoever to do with hygienic-milk supply. There were shown, nicely arranged in glass boxes, combs seemingly made of horn; cigar holders, with amber-colored mouthpieces; knives and forks, with handles similar in appearance to ebony; ferrules for umbrellas and sticks, and balls, rings, chess figures, dominoes, etc.; also a small table with an inlaid marble slab, and finally a number of thick slabs and staves with every imaginable variation of marble colors but of considerably less weight than real marble. These objects were made of "galalith"—*i. e.*, milk stone.

Skimmed milk, in spite of its many valuable qualities, has so far been little used; it contains a considerable portion of nutritious matter—*i. e.*, 1 liter (1.05 quarts) of skimmed milk is of about equal value to a quarter of a pound of meat. It is by far too little appreciated as a cheap food for the people, hence what the German peasant can not sell to milk-sugar factories or use for the manufacture of cheese is given to cattle and pigs as food. The principal albumenoid substance of skimmed milk, the casein, is the raw material out of which the new product galalith is manufactured. More than fifteen years ago the idea was originated to manufacture various articles like buttons, handles, ornamental plates, and colored pencils out of casein. The inventor took out a patent for a manufacturing process, which is described as follows:

Fresh casein—*i. e.*, ordinary or dried curds—were dissolved in hot soap water; to this solution the required coloring ingredients and a metallic salt were added, and a firm substance consisting of casein and metallic soap was produced, which, by drying and pressing into molds, could be given any desired shape. It is to be supposed that the inventor had found out by continued trials that casein by addition of a metallic salt becomes brittle and softens easily in water. With a view to counteracting this latter drawback soap was added, but the articles produced thus were soft and brittle, and the invention was not a success. The chemical factory of Schering at Berlin then invented a process, the idea of which was to make casein insoluble by the addition of formaldehyde, but the disadvantage of this invention was that the articles produced distended considerably in water.

The inventors of galalith succeeded, after many troublesome trials, in doing away with the deficiencies of former methods and in using the good that was in the former ones, for the working out of an entirely new process. Their first aim was to make an insoluble union of casein by the addition of salts and acids. The substance thus obtained was dephlegmated and dried, and, finally, by the addition of formaldehyde, the galalith was obtained. To produce, for instance, a material similar to ebony, which could be used for handles of table knives, they proceeded as follows: Dissolved casein was given a dark color by the addition of soot and, with the help of a metallic salt, "acetate of lead," a slate-colored precipitate was obtained. This was mixed with water and the thin pap filled into a cloth stretched over a frame. The water becoming absorbed by the cloth, the pap contracted into a uniform, firm, and dark mass; this was placed in a solution of formaldehyde and, after being dried, a product resulted which in luster and color was equal to ebony. In this way a raw material is produced which the inventors have protected by numerous patents.

An advantage of the new product as compared with celluloid is the fact that it does not ignite so easily and is entirely odorless. Trials have proved that even when kept for weeks in water it does not distend more than the best quality of buffalo horn; after one month it had not soaked in more than 20 per cent of water. Of late trials have been made to produce, by the addition of vegetable oils, an insulating material for electrotechnical purposes.

OLIVER J. D. HUGHES,
Consul-General.

COBURG, *June 17, 1903.*

COMPAGNIE GÉNÉRALE TRANSATLANTIQUE.

The following is a résumé of the annual report of the Compagnie Générale Transatlantique for 1902, which was submitted to the stockholders of the company at their annual meeting on June 20 last:

The net value of the company's steamers, real estate, material and supplies on hand, and personal property at the agencies (amortization, amounting to $1,096,419.71, deducted) on December 31, 1902, was $24,538,930.87, as compared with $25,212,358.73 on December 31, 1901, a decrease of $673,427.86. The assets were $29,468,766.17, a decrease of $759,689.08 as compared with the previous year. The total receipts for 1902, including the bounties and subsidies received from the French Government, were $9,938,951.31, against $9,533,440.68 in 1901, an increase of $405,510.63. The total expenses in 1902 were $8,842,531.61, a decrease of $113,923.40 as compared with 1901. The entire excess of receipts over the expenditures for the year 1902, amounting to $1,096,419.71, were appropriated for the amortization of the fleet and the construction of new vessels, no dividend being declared.

The company has ordered from the Société des Chantiers et Ateliers de Saint Nazaire a new steamer, *La Provence*, which will be [illegible] dimension and will exceed in horsepower their present steamers *La Lorraine* and *La Savoie*.

A. M. THACKARA,
Consul.

HAVRE, *July [illegible], 1903.*

NEW EUROPEAN-MEXICAN STEAMSHIP LINES.

The Hamburg-American Line has inaugurated a special fast freight and passenger steamship service between Hamburg and Veracruz, via Havre, Corunna, Habana, and Tampico. The vessels range in tonnage from 5,600 to 6,030 tons, are furnished with quadruple-expansion engines, and have an average speed of from 13½ to 14½ knots. They are provided with modern conveniences and have been specially fitted with a view to the comfort of passengers in the tropical service. The largest vessel of the fleet of three will draw, when fully loaded, 24 feet.

The service is monthly; a vessel leaves Hamburg on the 26th of the month, Havre on the 29th, Corunna on the 1st of the following month and arrives at Habana on the 14th and at Veracruz on the 17th, where it will remain for about a week. It then proceeds to Tampico, arriving on the 25th. On the 29th the boat leaves Tampico on her return trip, leaving Veracruz the 1st of the succeeding month and Habana on the 5th, arriving at Corunna on the 18th, at Havre on the 20th, and at Hamburg on the 24th, making the round trip in about two months.

Another new steamship line, to be known as the Austro-American, has recently been established by the Austrian Lloyd, of Trieste, for service between Adriatic, Mediterranean, and Mexican Gulf ports. The Lloyd Company, which operates a fleet of 20 steamers, intends to have a monthly service of steamers ranging from 3,550 to 6,400 gross tons each. No time-table has yet been issued, nor is it possible at present to obtain freight and passenger rates.

The first vessel to arrive at Veracruz was the steamship *Anna*, of 3,550 tons, which left Trieste March 10, calling at Genoa, Marseilles, Barcelona, Tampico, and Veracruz; on the return voyage touching at Progreso. The company advertises to receive freight from Mexico for Trieste and Mediterranean ports; also cargo for ports on the Continent, with transshipment to other vessels of the same line at Curaçao.

W. W. CANADA,
Consul.

VERACRUZ, *June 8, 1903.*

GERMAN OCEAN TRANSPORTATION COMPANIES.

All the German ocean transportation companies of Hamburg and Bremen, being compelled under their charters to make their business reports public, have done so for the year 1902. Several of these companies increased their capital stock in 1901 and 1902 to a considerable amount.

At the end of 1902 both the Hamburg-American Line and the North German Lloyd, of Bremen, had a capital stock of 100,000,000 marks ($23,800,000) each, against 80,000,000 marks ($19,040,000) in 1901. The Bremen Steamship Company Hansa had a capital of 15,000,000 marks ($3,570,000); the German-Australian Steamship Company, of Hamburg, 12,000,000 marks ($2,856,000); the Hamburg South American Steamship Company, 11,250,000 marks ($2,666,790); the Kosmos, of Hamburg, 11,000,000 marks ($2,618,000); the German East African Line, of Hamburg, 10,000,000 marks ($2,380,000); the Argo, of Bremen, 7,000,000 marks ($1,666,000); the German Levant Line, of Hamburg, 6,000,000 marks ($1,428,000); Neptun, of Bremen, 3,500,000 marks ($833,000).

The other regular lines are owned by private persons or limited companies and are not required to report.

A majority of these companies has secured working capital by loans, amounting to 58,250,000 marks ($13,863,500) for the North German Lloyd, 39,125,000 marks ($9,311,750) for the Hamburg-American Line, 45,500,000 marks ($10,829,000) for the East African Line, and 4,500,000 marks ($1,071,000) for the Hansa. The reserves of the different companies are large. The general and special reserves amount to 21,200,000 marks ($5,045,000) for the Hamburg-American Line and 21,100,000 marks ($5,021,800) for the North German Lloyd.

The Hamburg-American Line owns 119 vessels, valued at 143,500,000 marks ($34,153,000); the North German Lloyd, 107 vessels, valued at 141,800,000 marks ($33,748,400); Hansa, 41 vessels, valued at 22,300,000 marks ($5,307,400); South American Line, 32 vessels, valued at 22,900,000 marks ($5,450,200); East African Line, 18 vessels, valued at 15,800,000 marks ($3,760,400); and Levant Line, 26 vessels, valued at 9,700,000 marks ($2,308,600).

The average age of vessels, computed per ship tons, is between 5 and 6 years with the Australian Line; between 6 and 7 years with the Hamburg-American, the South American, the East African, Hansa, and Kosmos; between 7 and 8 years with the North German Lloyd; 10 years with the Argo and Neptun lines; and 12 years with the Levant Line.

RICHARD GUENTHER,
Consul-General.

FRANKFORT, *July 7, 1903.*

FREIGHT TONNAGE ON THE SOO.

The following summary of the freight tonnage passing through the two canals at the "Soo" for the months of April and May, 1903, with comparison with the same period of 1902, was published in the Toronto Globe, June 13, 1903:

> During the two months of April and May the total freight carried through the two canals at the Soo was 6,039,856 tons, which is 74,963 tons more than the quantity carried in April and May of 1902 and 4,591,811 tons more than recorded for the corresponding months of 1901. The quantity carried through the Canadian Canal was 796,510 tons against 532,188 tons in 1902 and 151,679 tons in April and May, 1901. During April and May, 1903, the Canadian Canal carried 11.64 per cent of the total; in 1902, nearly 8 per cent; and in 1901, 6.8 per cent.
>
> The quantity of wheat carried east by the two canals in April and May, 1903, was 15,347,173 bushels, a decrease of 3,414,000 bushels compared with the same period of 1902. There was also a decrease in flour of 217,390 barrels; in iron ore, of 434,048 tons; in lumber, of 16,345,000 feet. The chief increases were in grain other than wheat (2,970,864 bushels) and in general merchandise (5,111 tons).

M. J. BURKE,
Consul.

ST. THOMAS, ONTARIO, *June 22, 1903.*

PROPOSED FORTH-CLYDE SHIP CANAL.

The feasibility of a ship canal between the Forth and Clyde has been for many years a subject of discussion in shipping and commercial circles in Scotland. Several routes were suggested at various times, but no definite steps have been taken toward the preparation of plans. At present the prospect of the construction of such a water way is, however, considerably brighter. A company of London financiers is taking an active interest in the project, and has, it is said, adopted the scheme put forward by Messrs. D. & C. Stevenson, a prominent firm of harbor engineers of Edinburgh. Messrs. Stevenson surveyed the route some years ago from Alloa, on the Forth, to Arrocher, on Loch Long, and are now making a further survey in detail, preparing plans, etc. I am informed that an Edinburgh committee or syndicate is acting in conjunction with the London promoters, and that the sum of £10,000,000 ($48,665,000) has been pledged, on condition that Parliament shall guarantee interest on capital. The promoters are confident that Parliament will aid the enterprise to this extent, in view of the importance of the canal for naval purposes.

In regard to this proposed deep-water canal across Scotland, David Alan Stevenson, C. E., says:

The east and west coasts of Scotland are now connected by two canals, namely, the Forth and Clyde, from Grangemouth, on the Forth, to Bowling, on the Clyde, and the Caledonian, constructed at national expense, between Inverness and Fort William. Both of these canals are quite inadequate to meet the present wants of shipping, as they can only accommodate vessels of a small class. The first named is mainly used by barges, while the Caledonian can only be used by vessels of about 150 feet in length, 38 feet beam, and 17 feet draft. Both canals are seriously incumbered by numerous locks.

At present all vessels bound from the east to the west coast of Britain, or vice versa, have to pass around the end of the island, through the Pentland Firth, with its rapid tide and dangerous sea, combined with deceptive currents and prevalent fogs, or "south about" through the overcrowded English Channel, so frequently the scene of disastrous collisions. It can not be doubted that a ship canal through the narrow neck of land which separates the east and west coasts of Scotland, capable of carrying the largest vessels, would not only obviate all the dangers and delays incident to the "north about" and "south about" routes, but would effect much saving in time, in the cost of insurance, in wear and tear of vessels and their engines, and hence in the cost of transit; it would also for strategical purposes be of the greatest importance.

In designing such a canal the first points to be settled were, What are the essential requisites? These may be stated as follows:

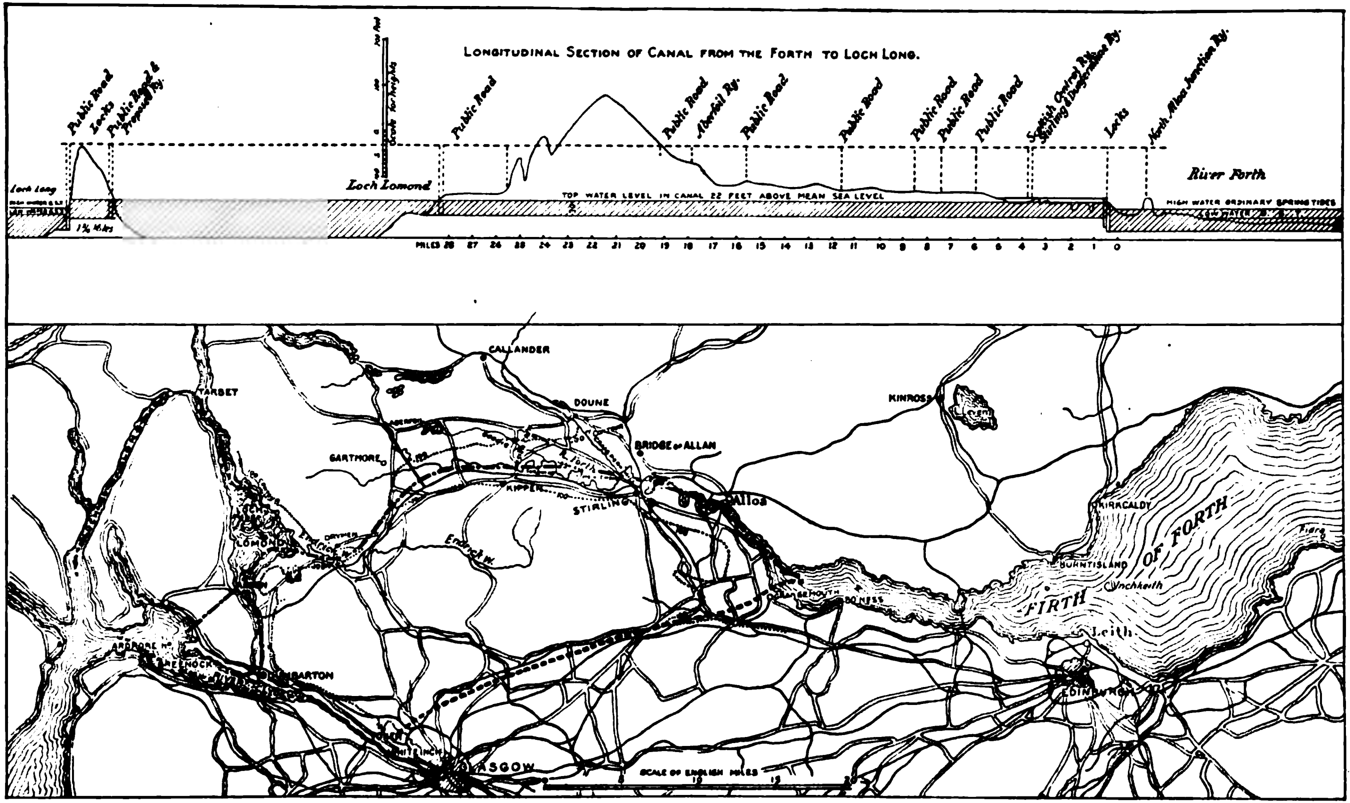
1. That it should be of such dimensions as to admit ships of the largest class of merchantmen, and also vessels of the royal navy, passing freely and with perfect safety from sea to sea, practically at all times of tide.

2. That it should be as free as possible from locks, hydraulic lifts, or other mechanical appliances, involving possible delay or risk to ships using it.

Having assumed these, as I think, indispensable conditions, the next question for solution was, Can a route be formed from the German Ocean to the Atlantic which fulfills them, and also can the canal be formed at a cost which will prove remunerative?

After careful study of the country and the levels, the conclusion was arrived at that a route along the valley of the Forth gives the only practical solution of the problem. There is, as is well known, a tract of country extending from Alloa, on the Forth, westward along the valley of the Forth to within about 10 miles of Loch Lomond, where the surface of the ground is only from 30 to 50 feet above mean sea level and the stratum is an alluvial deposit. Between this and Loch Lomond the ground rises rapidly and attains a maximum height of 236 feet above mean sea level and dips again to the south end of Loch Lomond, the surface of which is only 22 feet above mean sea level. The distance across this higher ground, from the 50-foot contour on the one side to the 50-foot contour on the other, is about 8 miles, 1¾ miles of it being above the 200-foot line.

Loch Lomond (which has ample depth for vessels of the largest draft) is to be utilized as canal toward the north end of the loch to Tarbet, and thence across to Loch Long there is only a distance of 1¾ miles, the ground attaining a maximum height of 130 feet above the mean sea level. Loch Long is practically the Atlantic Ocean, and the navigation of it is safe and the water of ample depth. This, then, is the route proposed by my firm, and the surface of Loch Lomond, which as I have said is only 22 feet above the mean level of the sea, is the proposed summit level of the canal, and having a water area of 21,000 acres and ample gathering ground—



LINE OF THE PROPOSED CANAL.

290 square miles—it would form on inexhaustible reservoir for supplying the locks with water. Only two locks at either end, at Alloa and Loch Long, would be required, as the level of the canal is only 13 feet and 17 feet above high-water level at these places, respectively. The exact route to be chosen will, of course, depend upon more minute inquiry than has yet been made.

The eastern approach to the canal, which will be tidal, will be formed by deepening the Forth or making a cut inland, with a depth of 25 feet at low-water spring tides, from opposite Grangemouth to the locks which it is proposed should be placed about 2 miles above Alloa. This will give a depth of 43 feet at high-water spring and 38 feet at neap tides. The distance from Grangemouth to Alloa is 6 miles. From Alloa the canal will pass to the north of the links of Forth and to the northward of the town of Stirling, then along the valley of the Forth to Gartmore and enter Loch Lomond near the mouth of the Endrick, a distance of 29 miles.

Near the Loch Lomond end there are 5 miles of high ground, which, according to the geological survey, is the old red-sandstone formation. This part of the work will be open cutting. The distance from the junction of the loch and canal to Tarbet is 14 miles, and across the neck of land to Loch Long 1¾ miles. Loch Long is 15 miles in length to its junction with the Firth of Clyde. The total distance from Grangemouth to the Firth of Clyde is 65¾ miles.

Regarding the dimensions of the canal, it is essential to its success that it be made on a large scale and free from locks, excepting at the seaward extremities. As the level of the water of the canal will be only about 13 feet above high water, one lock will be sufficient at high water, but two may be necessary at other times of tide. It is proposed to make the canal throughout with a depth of 30 feet, with a width at the bottom the same as the Suez Canal—namely, 72 feet—and side slopes varying with the nature of the material. The locks will be capable of passing the largest vessels afloat, or about 600 feet in length and 80 feet in width, with smaller locks alongside for smaller vessels.

It would have been desirable to have proposed a canal of sufficient width to allow two of the largest vessels to pass each other at any place on the route; but in roughly estimating the cost it was found that this would involve so large an expenditure as to make it doubtful whether such a work would, in the meantime, prove remunerative. Frequent passing places, however, will be made at suitable intervals.

There are no very serious difficulties to be overcome, though the cutting is no doubt a heavy one. There are few railways or road crossings of any importance, and the excavations are largely in soft material and the disposal of the excavations could be easily and cheaply effected, owing to the proximity to the canal banks of waste ground.

A ship canal of these dimensions would not only accommodate merchant vessels, but would prove of the greatest advantage to His Majesty's navy, as the largest ships of war at present in existence could pass through from the one coast to the other in about eight hours, and thus the facility for defending the coast in time of war would be very much increased.

It is believed that the route suggested through the Forth Valley would prove the most satisfactory for a ship canal. Both approaches are in smooth water and free from every danger to navigation. The western outlet into Loch Long is exceedingly favorable, as ships of the largest class could at once proceed to sea quite free from the interruption and liability to grounding which they would meet with had the canal debouched into the River Clyde. The entrances to the Forth and Clyde are now so well marked by light-houses and fog signals that vessels of any burden can run for these waters with the most perfect confidence, When considering the best route for the canal after vessels enter Loch Lomond, two other routes were feasible besides that already described:

1. Across Loch Lomond to the opposite shore near Arden and then by a cut about 4 miles in length, partly open and partly in tunnel, to the Clyde to the northward of Ardmore Head.

2. Along Loch Lomond to its southern end and through the vale of Leven to the Clyde at Dumbarton.

The relative merits of the different routes from Loch Lomond to the sea, so far as distance is concerned, are as follows:

	Miles.
Tarbet route (Endrick to mouth of Loch Long)	28
Arden route	14
Dumbarton route	20½

The Arden route is therefore the shortest, but it would be the most expensive, owing to a length of tunnel of 1¾ miles, which could not be overcome by open cutting, as it passes under land about 300 feet in height. The Dumbarton route is shorter than the Tarbet route by about 7½ miles, but as the Dumbarton route involves 5 miles additional canal, where vessels could only go about 5 miles an hour, and 6 miles of the Clyde, where the speed will probably be restricted to about 8 miles an hour, the time occupied by the journey either way will be about the same. In steaming up Loch Lomond and also down Loch Long vessels may go at full speed, and there would be no interruption from river traffic.

The cost of the undertaking can not be more than approximately estimated without particular investigation as to the nature of the strata in the line of the canal; but my firm estimate the cost of the Tarbet route, with their present knowledge derived from the ordnance and geological surveys, and including interest during construction, at £10,000,000 ($48,665,000). The cost of management and maintenance my firm estimate at £60,000 ($291,990).

The saving in distance that would be effected may be stated thus:

1. From the Clyde to ports on the east coast of Scotland, northeast of England, and northwest of Europe the distance saved would be from 529 miles to 238 miles, in the majority of cases the distance being much more than halved.

2. From the Forth to ports on the west coast of Scotland, northwest of England, Ireland, America, and the Mediterranean the distance saved would be from 487 to 141 miles; in all cases, except the American and Mediterranean route, the distance being more than halved.

3. Tyne ports to the St. Lawrence River, the distance saved would be 150 miles.

4. West of Britain and northeast of Ireland to middle western ports of the Continent, the distance saved would be from 377 to 98 miles.

The canal will affect an enormous tonnage, estimated by the sanguine engineers at 9,500,000 tons per annum. At an average rate per ship and cargo of 1s. 6d. (36 cents) per ton, this would yield a revenue of about £700,000 ($3,406,550).

RUFUS FLEMING,
Consul.

EDINBURGH, *July 1, 1903.*

THE SUEZ CANAL IN 1902.

The annual report of the Suez Canal Company for 1902 has appeared and contains, besides the figures of interest for the stockholders, valuable information with reference to the commerce of European countries with eastern Asia, India, and West and Southwest America.

The year 1900 was not a prosperous one and came only up to the average business on account of the Chinese war expeditions and business dependent on them.

Increase in traffic.—The year 1901 showed a large increase in traffic ($1,930,000), of which 12 per cent was on account of Russian petroleum to eastern Asia and South America, while the high price for European coal had curtailed the English coal export. The additional increase of traffic in 1902 is mainly on account of return freights, a new and unexpected circumstance.

The increase of European exports via the Suez Canal is inconsiderable. Russian petroleum exports across the Pacific have decreased on account of large stocks in eastern Asiatic and South African ports, while England, on account of lower prices for coal, increased its export. Return freights from the United States have increased, while those from Australia have remained unchanged.

Taken as a whole the result has been a most gratifying one for the company. The total number of vessels passing through the canal during the last three years was: In 1900, 3,441 vessels (with 282,511 passengers), of which 135 were military transports; in 1901, 3,699 vessels, of which 96 were military transports; in 1902, 3,708 vessels, no military transports being mentioned.

The net tonnage during the three years was:

	Tons.
1900	9, 738, 152
1901	10, 823, 840
1902	11, 248, 413

The increase from 1900 to 1902 was 9 per cent in number of vessels and 15 per cent in tonnage. This large increase in tonnage is due to the larger sizes of modern-built ships, which necessitate increased expenditures for the canal.

Valuation.—In spite of lower valuations of the canal, on account of wear and tear, the total valuation at the end of each year has increased as follows:

	Francs.	
1900	586, 700, 000=	$113, 233, 100
1901	598, 500, 000=	115, 510, 500
1902	593, 600, 000=	114, 564, 800

Receipts and expenditures.—The receipts and expenditures during the three years were:

Description.	1900.		1901.		1902.	
	Francs.		*Francs.*		*Francs.*	
Receipts	93,451,403	$18,036,121	103,121,126	$19,902,377	106,849,760	$20,621,993
Expenditures	40,948,958	7,903,149	40,246,678	7,767,609	42,179,240	8,140,393
Excess of receipts	52,502,445	10,132,972	62,874,448	12,134,768	64.670,520	12,481,600

Profits.—The net profits for distribution, less sinking fund of 3 per cent, for the years 1900–1902 were, respectively, 51,568,451 francs ($9,952,711), 61,330,704 francs ($11,837,826), and 62,738,440 francs ($12,118,519).

Outlay.—During the three years the following amounts were paid:

To—	Total.		Per cent.		
			1900.	1901.	1902.
	Francs.				
Stockholders	71,000,000	$13,703,000	36.6	43.5	43.7
Egyptian Government	15,000,000	2,895,000	7.7	9.2	9.2
Promoters' shares	10,000,000	1,930,000	5.1	6.1	6.1
Directors	2,000,000	386,000	1	1.2	1.2
Employees	2,000,000	386,000	1	1.2	1.2

Dividends.—The distribution of dividends was as follows:

Description.	1900.		1901.		1902.	
Preferred stock:	*Francs.*		*Francs.*		*Francs.*	
Gross	116,530,000	$22,490,290	133,860,000	$25,834,980	134,160,000	$25,892,880
With taxes deducted	108,000,000	20,844,000	125,000,000	24,125,000	125,000,000	24,125,000
Common stock:						
Gross	91,530,000	17,665,290	108,900,000	20,017,700	109,160,000	21,067,880
With taxes deducted	84,800,000	16,366,400	101,650,000	19,618,450	101,560,000	19,601,080
Promoters' shares:						
Gross	51,570,000	9,953,010	61,330,000	11,837,690	61,500,000	11,869,500
With taxes deducted	48,310,000	9,323,830	57,770,000	11,149,610	57,700,000	11,136,610

Nationality of ships.—As to nationality and tonnage, the ships passing through the canal were:

Nationality.	1900.	1901.	1902.
	Tons.	*Tons.*	*Tons.*
English	5,605,425	6,252,819	6,772,911
German	1,466,392	1,762,624	1,707,322
French	751,759	756,782	769,110
All other	1,914,576	2,051,615	1,999,070
Total	9,738,152	10,823,840	11,248,413

RICHARD GUENTHER,
Consul-General.

FRANKFORT, *July 2, 1903.*

RIVER AND CANAL IMPROVEMENTS IN ITALY.

In nearly all the commercial countries of Europe the canal seems to be regaining its long-lost prestige. Germany has expended during the past ten years hundreds of millions of marks for the construction of artificial water courses, and Austria will expend during the next nine years no less than 325,000,000 crowns ($65,975,000) for a like purpose, while Italy seems to be determined not to remain far behind in the improvement of inland navigation.

About two years ago the Italian Government appointed a commission to investigate and report upon the advisability of establishing a system of national water ways in the northern part of the Kingdom. This commission, which is presided over by the former under secretary of state and present member of Parliament, Romanin-Jacur, has just made its report. It recommends the establishment of a network of inland water courses of a total length of 3,400 kilometers (2,112 miles). This great work can be achieved the more easily because northern Italy has already 2,700 kilometers (1,677 miles) of navigable rivers and canals, and these can be connected with each other by a system of auxiliary canals of a total length of less than 700 kilometers (434 miles). The commission estimates the total cost of the proposed improvements at 118,000,000 francs ($22,774,000). The opinion is expressed, however, that the actual cost to the Government will not exceed 77,000,000 francs ($14,861,000), as at least 41,000,000 francs ($7,913,000) are to be realized, it is hoped, from gain of water power, estimated at 48,000 horsepower, and from increased facilities for agricultural irrigation.

The main line of the proposed system would be a canal connecting Venice with Milan and Turin. Another canal would connect Milan with Bologna, and a third Bologna with Venice. It is further proposed to open an inland water course from Venice to the Austrian frontier, for which purpose the rivers Stella, Corno, and Ausca could be utilized.

An improved system of water highways would be a powerful stimulus to the farms and factories of northern Italy, enabling manufacturers to collect their raw materials and fuel with less labor and expense and opening more distant and more profitable markets for both industrial and agricultural products.

There is no doubt that the proposed system of canals would benefit principally the port of Venice, and for this reason it is likely to be opposed by the Ligurian provinces. Another opposing element would probably be the railroad interests. The canal commission denies, however, that it would curtail either the foreign trade of Genoa or the volume of railway traffic. While the heavier freights—coal and certain kinds of raw material—would go to the canals, there would be a corresponding increase in freights requiring speedy carriage by rail and sustaining proportionally higher transportation charges.

It is worthy of note that some of the canals which it is proposed to make use of in this national system of water ways were constructed nearly five hundred years ago, and that one of them is known to have been equipped with lift locks as early as 1497.

FREDK. W. HOSSFELD,
Consul.

TRIESTE, *June 19, 1903.*

NEW ELECTRIC TURNTABLE IN GERMANY.

The Elektrizitäts Aktiengesellschaft, formerly W. Lahmeyer & Co., in Frankfort, have been fitting up of late a number of locomotive works in Germany with an electric turntable which is worthy of attention.

Figure 1 shows the turntable set up by this company in the yards of Hendschel & Co., Cassel. The mechanism for the most part is not complicated, but more or less a simple application of electricity on the same principle as that in case of deck and dock cranes, etc.

Figure 2 shows an apparatus where electricity is applied on the same principle, but the machinery is of different construction.

Figure 3 shows the principle upon which electricity is applied to turntables in general. The current passes through an overhead wire and is very similar in arrangement to electric street cars. The current is turned on and shut off by a crank, the same as on electric trolleys.

Figure 4 shows a turntable in action. Any number of these turntables can be set up in locomotive and railway yards, and the current can be switched from a central station from one turntable to another.

ERNEST L. HARRIS,
Commercial Agent.

EIBENSTOCK, *July 3, 1903.*

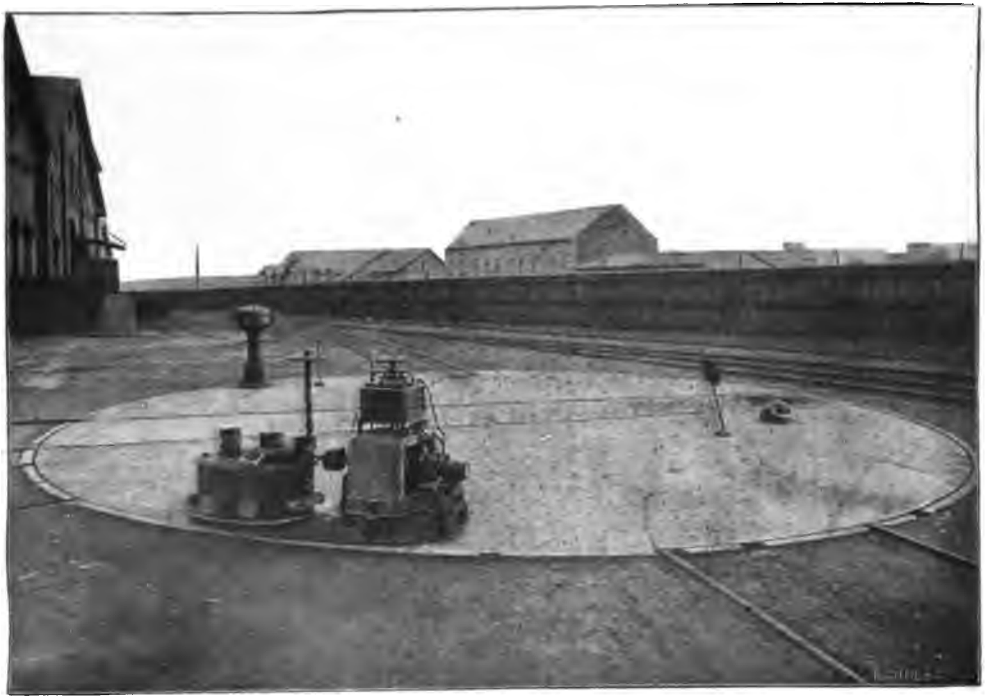


FIG. 1.—ELECTRIC TURNTABLE READY FOR OPERATION.

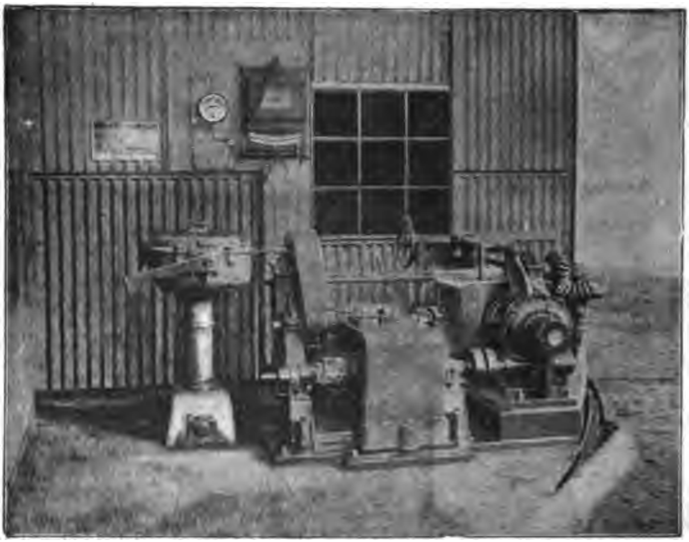


FIG. 2.—ELECTRIC MOTOR FOR TURNTABLE.

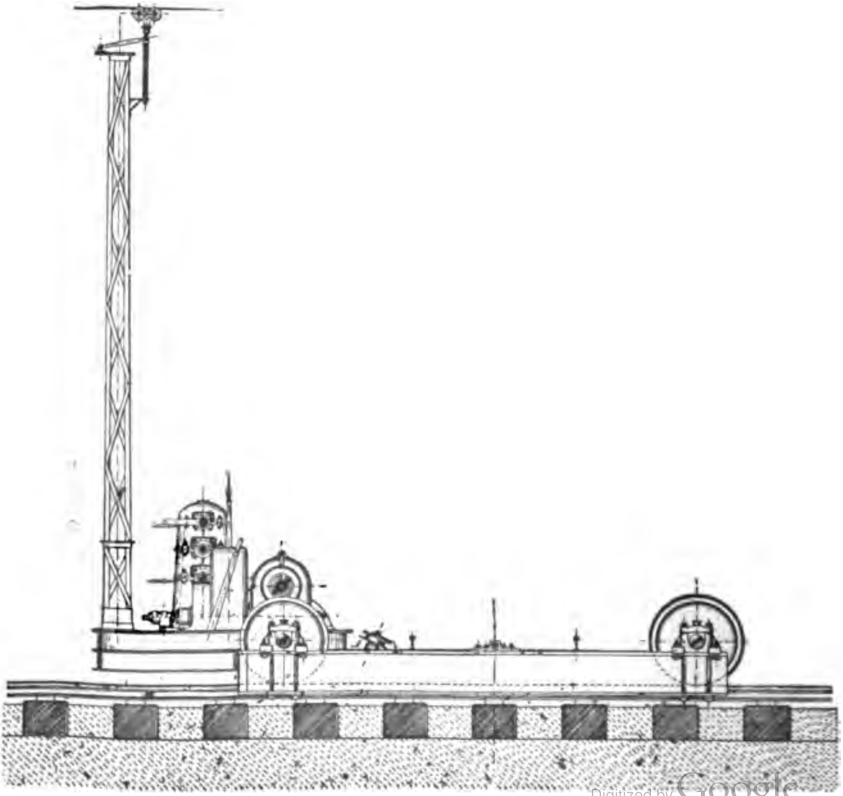


FIG. 3.—PRINCIPLE UPON WHICH ELECTRICITY IS APPLIED TO TURNTABLE.

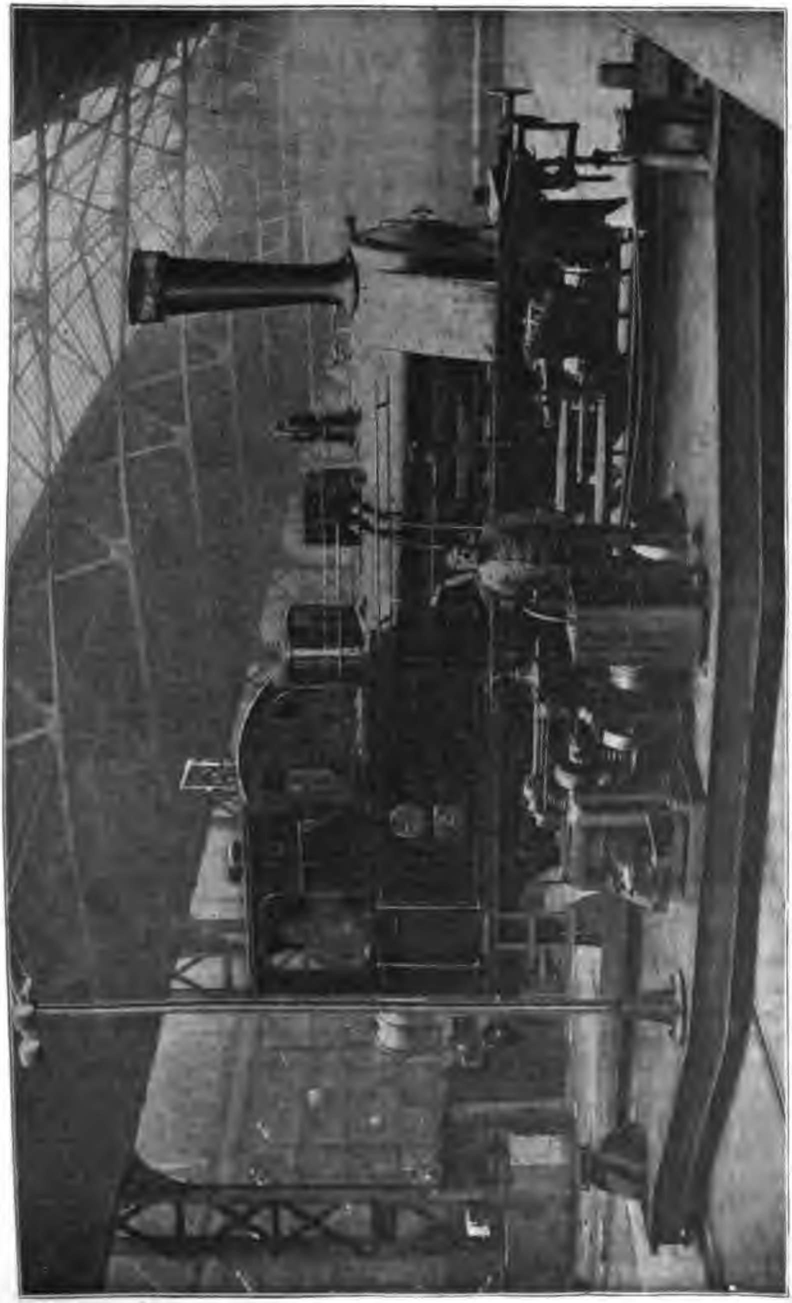


FIG. 4.—ELECTRIC TURNTABLE IN OPERATION.

MATERIAL FOR EGYPTIAN RAILROADS.

A report of the Austro-Hungarian Chamber of Commerce of Alexandria gives the following interesting statistics:

The total value of material ordered for the Egyptian State railroads in the year 1902 amounted to £760,105 Egyptian ($3,757,239). The following countries participated in this trade to the amounts given:

Country.	Value of materials.	
England	£519,024	$2,565,911
Belgium	98,885	488,850
Turkey	40,177	198,595
Germany	24,620	121,696
Sweden and Norway	21,368	105,682
France	12,741	62,595
Egypt	10,038	49,607
Hungary	9,085	44,907
Austria	7,207	35,624
United States	6,958	34,393
Italy	6,930	34,255
India	2,434	12,031
Switzerland	638	3,153
Total	760,105	3,757,239

Of the foregoing, England furnished coal (£120,000 Egyptian, or $593,160), rails, ties, and rolling stock; the latter was also bought from Belgium. Turkey, Sweden, Austria, and India furnished mainly wooden material. Hungary furnished trucks, which are said to be better made than those from the United States, where they were formerly purchased. France supplied oil, varnish, and copper tubes. Italy supplied stones. Germany received orders for locomotives, wheels, steel for bridges, telegraph wire, and insulators. Austria also furnished locomotives. About locomotives, the railroad management remarks:

LOCOMOTIVES.

During the last year 25 locomotives for passenger trains were ordered—15 from a firm in Cassel, Germany, and 10 from the State Railway Company at Vienna. All these locomotives are of the system "Trevithick," but the German firm was allowed to make slight changes.

The American locomotives require very large quantities of coal, although their shape is very good.

CARS.

The American cars are less durable, excepting those which were furnished for the narrow-gauge line Luxor-Assuan, which meet all requirements.

The Hungarian freight cars give satisfaction in every way. The Hungarian passenger coaches can also be favorably mentioned, although they have a few faults which are annoying to the public and the railway employees.

RICHARD GUENTHER,
Consul-General.

FRANKFORT, *June 30, 1903.*

TRANS-SIBERIAN RAILWAY SCHEDULES.

According to the new schedule and tariff of the great Trans-Siberian Railway, which has just been issued, express trains which have been leaving Moscow heretofore three times a week will now be dispatched four times a week—that is, Mondays, Wednesdays, Thursdays, and Saturdays, and will arrive at Moscow on Mondays, Wednesdays, Fridays, and Sundays. The trip from Moscow to Dalny can be made in thirteen days by fast and in seventeen days by slow trains. Direct communication exists at present from Moscow to Irkutsk and then to Lake Baikal; after crossing the lake, to Missova, via Harbin, direct to Dalny. The distance from Moscow to Manchuria station is 6,295 versts (4,197 miles); to Harbin, 7,171 versts (4,780 miles); to Dalny, 8,053 versts (5,368 miles); and to Port Arthur, 8,082 versts (5,388 miles).

Express trains only run from Moscow to Irkutsk; thence to Manchuria station, post and passenger trains; and from Manchuria station to Dalny, express and post trains.

The new rates for traveling on Government trains, including sleepers, are as follows:

Route and class.	Rate.	
	Rubles.	
Moscow to Irkutsk:		
Class I	122.45	$61.23
Class II	77.80	38.90
Irkutsk to Manchuria:		
Class I	42.10	21.05
Class II	26.65	13.32
Manchuria to Harbin:		
Class I	54.00	27.00
Class II	33.75	16.87
Harbin to Vladivostock:		
Class I	28.50	14.25
Class II	17.65	8.82
Harbin to Dalny:		
Class I	54.00	27.00
Class II	33.75	16.87
Harbin to Port Arthur:		
Class I	57.00	28.50
Class II	35.65	17.82
Moscow to Vladivostock:		
Class I	238.93	119.46
Class II	149.80	74.90
Moscow to Dalny:		
Class I	265.10	132.55
Class II	167.10	83.55
Moscow to Port Arthur:		
Class I	268.10	134.05
Class II	169.00	84.50

In the above rates the crossing of Lake Baikal on the steamer *Angara* is included.

The charges for special trains, which can be procured from Moscow, Warsaw, and Wirballen to the Far East, are 2 rubles ($1.03) for each verst (0.663 mile) on the Russian railroads and 50 per cent more on the Chinese railroads. These special trains will consist of three passenger cars and one baggage car.

SAMUEL SMITH,
Consul.

MOSCOW, *June 17, 1903.*

ORDER IN RAILWAY STATIONS.

On the 18th of this month the department of railways of Baden issued an order restricting the free passage of the public through the depots and upon the platforms where the trains enter and depart.

Heretofore there were no restrictions in the Grand Duchy of Baden regarding access to trains, but in order to prevent accidents and the congregating of the public where the officials might be interfered with in the discharge of their duties the new order was issued. In the future all persons will be obliged before passing through the gates to show either a railroad ticket or a ticket giving them the privilege of the platforms. These "privilege" tickets cost about 2½ cents and may be procured by dropping a 10-pfennig piece into an automatic machine. As the enforcement of the new order on all the lines at once would involve considerable expense and necessitate changes at many of the stations, it will be enforced gradually.

During the month of May, 1903, the railway receipts in the Grand Duchy of Baden showed an increase of $86,182 over the receipts for May, 1902. The total receipts for May, 1903, were $1,646,441. The total receipts for the first six months of 1903 were almost $7,140,000—an increase of $357,000 over a like period in 1902.

JOSEPH I. BRITTAIN,
Consul.

KEHL, *June 24, 1903.*

ELECTRIC POWER AND TRANSMISSION IN INDIA.

There has recently been carried out in the native state of Mysore, southern India, the largest transmission of power by means of electricity that has yet been attempted in the East.

The site of the generating station is at a fork of the Cauvery River, the falls from which the power is derived—and which are known as the Buna Chukki and the Gangan Chukki—being located in the east and west branches of the river, respectively, about half a mile from the north, or down-stream end, of the island of Sirasamndrum.

The Cauvery, which is one of the principal rivers of southern India, rises in the Coorg Hills of the western Ghauts, near the Malabar coast, 4,000 feet above the level of the sea. It flows in a circuitous southeasterly course across the peninsula and falls into the Bay of Bengal, on the Coromandel coast. In the vicinity of Trichinopoly it separates into several branches (the principal of which is the Coleroon River, 92 miles long), which enter the sea by numerous mouths in the province of Tanjore.

The whole course of the Cauvery is about 475 miles and is navigable only for small boats. The crafts in use are circular baskets, 9 to 14 feet in diameter, covered with buffalo leather.

The native brings produce in them down the river, but is unable to navigate them in returning on account of the swiftness of the stream. He therefore takes them to pieces and carries the leather back on his head.

The Cauvery, in its course of 160 miles through Mysore territory, receives six large tributaries, draining an area estimated at about 6,400 square miles before it reaches the gorge in which the falls are situated.

For 20 miles above the island of Sirasamndrum the river forms the boundary between the native state of Mysore and the presidency of Madras, the two branches formed by the island uniting about 1½ miles below the falls, and after a course of some 20 miles enter the British territory of the Madras presidency.

The question of utilizing the power afforded by these falls had been discussed from time to time prior to 1890, but as there was no apparent local market for it and no prospect of the establishment of manufacturing industries in the district were cheap power made available, the matter got little beyond the state of conjecture.

In 1894–95, however, the Mysore government established temporary gauging dams in the river at Sirasamndrum, with the object of determining the amount of power available under minimum conditions—*i. e.*, during the dry seasons; and while these tests were not, perhaps, as regards accuracy, as satisfactory as might have been desired, they were at the same time sufficiently convincing to justify the belief that a steady supply of power on a fairly large scale could be counted upon.

The progress which has been made in the United States in electrical transmission of power over long distances, and the utilization of such power for mining and other purposes, had been watched closely by the engineers connected with the Mysore government.

In June, 1899, the idea of working the famous Kolar gold mines, 92 miles distant from Sirasamndrum, with electric power generated at the falls was conceived by Capt. A. C. Jolly de Lotbiniere, R. E., the deputy chief engineer to the government of Mysore. This idea was cordially supported by the chief engineer, Col. D. McNeil Campbell, R. E.; by the late Sir K. Sheshadni Iyer, at the time dewan of Mysore; and by the Hon. Col. D. Robertson, the British resident in Mysore.

Negotiations therefore were at once entered into with the directors of the gold-mining companies as to the amount of power they would require and with the Madras government with reference to water rights, the scheme in the meantime having received the sanction of His Excellency the Viceroy of India, Lord Curzon.

In August, 1899, Captain de Lobtiniere was sent by the Mysore government to Europe and America for the purpose of discussing the scheme with experts in those countries, of drawing up necessary plans and specifications, and of writing tenders and placing the order for the necessary apparatus, it having been settled with the gold-mining companies that the amount of power should be fixed, for the first installation, at 4,000 horsepower, delivered at the mines, for a period of ten years.

In August, 1900, the contracts had been placed—that for the supply and erection of the entire electrical plant for generation, transmission, and distribution with the General Electric Company, of New York, while the contract for the hydraulic plant was placed with Messrs. Escher Wyss & Co., of Zurich, Switzerland.

The Mysore government engineers at once started the work of the excavation of the channels which were to bring the water around from a point above the falls to the point at which it was to be carried down the shaft in pipes to the turbines. They also began the erection of bungalows for the accommodation of the staff to be sent out from the United States and of the building to receive the machinery, this work being under the immediate charge of Lieut. J. C. Hunter, R. E., as resident engineer.

The staff sent out from the United States by the General Electric Company consisted of 16 men, the first party of whom arrived in India shortly before Christmas, 1900, the remainder following at intervals during 1901.

In January, 1901, the first shipment of material reached Mormugoa Bay, the port of Portuguese Goa and the nearest port of convenient shipment.

A final survey of the 92 miles over which the transmission line was to pass was at once started and the work of clearing the jungle for its erection taken in hand.

In constructing this great pole line American engineers had to deal with some peculiar problems. For example, to prevent the white ants eating the poles, iron sockets 7 feet high were set up to raise the edible wood out of the ants' exploring range. The wild elephants of Mysore had also to be taken into consideration. After careful measurements of the trunk-reaching abilities of the elephants, the wires were strung so high that the hugest can not ground the current.

A central depot near Bangalore was established, from which the material was distributed to the falls, to the gold fields, and along the transmission line. As the nearest railway station to the falls was 28 miles distant it may be easily imagined that one of the most difficult features of the work was the transporting of the heavy machinery, some single pieces of which weighed 6 and 8 tons. Over this distance and in this connection valuable assistance was rendered by the Mysore government in the loan of their large oxen and trained elephants. Three of the latter were often used in drawing a single piece of machinery, and at other times seven yoke of oxen were to be seen doing similar service, assisted by two elephants pushing.

On account of the large number of natives employed in connection particularly with the hydraulic and building work, special precautions were taken by the Mysore government to prevent an outbreak of plague, cholera, or smallpox, and, although cases did occur from time to time, the measures taken were successful in preventing any serious epidemic or spread of these diseases, though the work was several times interrupted for short periods.

In spite of these interruptions, however, and often somewhat unusual conditions in other respects, which were encountered, the entire plant for generation, transmission, and distribution, together with the buildings containing it, was complete in all respects at the beginning of June, 1902, and on the 9th of that month water was first admitted to the penstocks.

The preliminary testing occupied some two weeks, and on June 30 the British resident at Mysore formally opened the plant and power was sent over the 92 miles of line to the Kolar gold fields. Commercial service to the mines was taken on June 15 and has since been uninterruptedly maintained.

Mysore is a feudatory state of British India and ranks second in point of importance of the Native States. The rulers are styled maharajahs, and are of Rajput ancestry. The present maharajah has but lately attained his majority and succeeded in full possession of the throne.

He is a prince of much promise. His wealth and education especially fit him to rule a region over which his ancestry have ruled from time out of memory. Personally, the consul has a very pleasant remembrance of his first interview with the maharajah.

The progressiveness of the government of Mysore in undertaking this work can scarcely be fully appreciated outside of India, and it is a pleasure to be able to record the fact that they are being well repaid for the display of this spirit, the gross returns which they are receiving from the plant being approximately $50,000 per month, of which the operating expenses amount to a very small percentage.

The generating plant consists of 7 units of 750 kilowatts each, directly connected to the shaft of a water wheel, and 2 exciting units similarly driven. Three-phase alternating currents are generated at a frequency of 25 cycles, and a voltage of 2,000 in the generating station in the gorge from which cables are run to the transformer station on the bluff above, where the voltage is "stepped up" to 3,000.

At the other end of the transmission line, which is in duplicate, the stepdown transformer station is situated where the voltage is reduced to 2,300 for distribution to the induction and synchronous motors at the various gold mines.

The General Electric Company, of New York, by whom the electrical machinery was supplied and installed, operated the plant from its start until March 15, 1903, when they handed it over to the government of Mysore, into whose employ practically all of the staff then entered who had been brought out from the United States.

That it may have a skilled staff of capable engineers to operate the plant in the future, the government of Mysore has sent a number of its bright young men to the United States to receive education in theoretical electric engineering and later on to be given practical instruction in the offices and factory of the General Electric Company.

So well have the mining companies of the Kolar gold fields been pleased with the use of the electrical power, and so greatly have the output of the mines been increased thereby, that they recently made application to the Mysore government for the delivery on the gold fields of an additional 2,000 horsepower, and that government has now placed orders with the same company who supplied the initial plant for the generating and transforming apparatus necessary to deliver this extra power.

For the data of the above description I am very largely indebted to Mr. William C. Lusk, who is the able and congenial representative of the General Electric Company in India.

WM. THOS. FEE,
Consul.

BOMBAY, *June 13, 1903.*

MOCHA COFFEE.

During the past few years I have often heard the assertion made and have seen it in American newspapers that there was no such article as Mocha coffee, that the term is purely a fiction, and that what was once known as Mocha coffee is so mixed with other coffees that there is no longer a real Mocha.

In order to help correct such an impression and to do the coffee merchants of this place and the importers in the United States an act of justice, I wish to say that there is such an article to-day in the American market as Mocha coffee, that this coffee is of the same kind and from the same place as the noted Mocha coffee of several generations ago, and that the growers and handlers of this coffee are as particular in regard to its quality and purity as they ever were.

At different times merchants have tried to ship coffee from other countries to this place and forward it from here as genuine Mocha, but the city authorities have always suppressed such traffic and have otherwise assisted the merchants in keeping up the standard and good name of this coffee.

Knowing of the carefulness with which the coffee interests are managed and the Government's protection over it, I am of the opinion that if by the time the consumer gets his Mocha coffee it is not pure, the mixing has been done after it leaves Aden.

I inclose a letter from E. D. Inward, esq., secretary of the Aden Chamber of Commerce, which tells of the more recent steps that have been taken to protect the Mocha-coffee interests.

W. M. MASTERSON,
Consul.

ADEN, *June 1, 1903.*

MAY 22, 1903.

W. M. MASTERSON, Esq.,
Consul for the United States of America, Aden.

DEAR SIR: Replying to your letter of yesterday's date, I beg to inform you that the question of protection of Mocha coffee from any possibility of being mixed with foreign coffees has for a long time been considered by this chamber.

An order—No. 36—dated the Aden Residency, April 13, was issued to the effect that all coffee or coffee husks other than Mocha should be placed in the Port Trust godowns (warehouses) at Maala and the keys kept by the trustees; but as this proved too expensive for some of the smaller coffee merchants here, who could not profitably afford to pay the godowns rent charged by the Port Trust, further representations were made to the political resident by this chamber with the result that a more recent order has been issued and is now in force to the effect that all outside coffees must be stored in merchants' own godowns at Maala and the keys kept by the Port Trust officials. The above order obviates all possibility of fraudulent mixing, and you will be conferring a great benefit on the Aden coffee traders if you make this information as public as possible in the United States. A control has always been kept over foreign coffees here.

Yours, respectfully,

E. D. Inward,
Honorary Secretary.

The following table, prepared by the Bureau of Statistics, shows the total imports of coffee into the United States from 1893 to 1902, inclusive:

Free.

Year.	Total importation.		Importation of Aden, or "Mocha."	
	Quantity.	Value.	Quantity.	Value.
	Pounds.		*Pounds.*	
1893	541,156,950	$76,668,983	....	....
1894	531,705,072	87,173,108	....	....
1895	645,706,201	95,087,161	....	....
1896	580,597,915	84,793,124	4,721,487	$899,226
1897	737,645,670	81,544,384	5,118,386	859,602
1898	870,514,455	65,067,631	4,741,556	890,775
1899	831,827,063	55,275,470	3,676,567	589,159
1900	787,991,911	52,467,943	1,719,639	284,215
1901	854,871,310	62,861,399	1,596,047	243,682
1902	1,091,004,252	70,982,155	2,688,285	377,352
Total	7,473,020,799	731,921,358	24,261,967	4,144,011

Coffee imported under section 3, tariff act of October 1, 1890 (dutiable).

Year.	Total importation.		Importation of Aden, or "Mocha."	
	Quantity.	Value.	Quantity.	Value.
	Pounds.		*Pounds.*	
1892	7,268,876	$1,240,323	....	....
1893	22,312,118	3,816,575	....	....
1894	19,229,265	3,141,568	....	....
1895	6,502,774	1,043,556	....	....
Dutiable	55,313,033	9,242,022	....	....
Free	7,473,020,799	731,921,358	24,261,967	$4,144,011
Grand total	*7,528,333,232	741,163,380	*24,261,967	4,144,011

* The Aden coffee and values are included in the grand totals.

CUBAN TARIFF ON COFFEE.*

The following text of the Cuban tariff on coffee has just been received from Mr. H. G. Squiers, the United States minister to Cuba:

DEPARTMENT OF THE TREASURY.

Be it by these presents known, That the Congress has enacted, and I, Tomas Estrada Palma, Constitutional President of the Republic of Cuba, have sanctioned, the following law:

ARTICLE 1. Eighteen dollars is fixed as the import duty on coffee per 100 kilograms [220.46 pounds] without prejudice to the modification it may be necessary to make when the tariff of the Republic is made.

ART. 2. Collection of the duties established by this law will begin from the publication of said law in the Official Gazette, but such shipments of coffee as it is proven in due form were shipped prior to the said publication will pay the tariff duties now in force.

Therefore, I command obedience and enforcement of the present law in its entirety.

Done at the palace of the President, in Habana, on May 30, 1903.

T. ESTRADA PALMA.

JOSÉ M. GARCIA MONTES,
Secretary of the Treasury.

BRITISH ENGINEERING STANDARDS COMMITTEE.

A pamphlet giving a short account of the engineering standards committee and its work has been issued by Messrs. Robert Atkinson, Limited, the compilers and publishers of the British engineering standards coded lists, issued by authority of the standards committee. It contains a list of the various committees and subcommittees engaged in considering the question of standardization, together with the names of the members who compose them and a statement of the work with which each is occupied.

The committee on sections used in shipbuilding—such as bulb angles, bulb tees, bulb plates, etc.—has been engaged in deciding on a series of sections which, on the one hand, would give sufficient graduation, and on the other would be as small as possible, so as to reduce to a minimum the plant and stock of rolls to be kept by manufacturers; and a further subcommittee is deliberating on the most suitable tests to be applied to iron and steel material used in the construction of ships and their machinery, with the object of arriving at a common basis of agreement between the many divergent specifications and restrictions at present in vogue.

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* *Cuban general tariff.*—Consul-General Steinhart, of Habana, writing under date of July 4, 1903, says:

"In regard to duties collected on imports, I would suggest that copies of the customs tariff for ports in the island of Cuba, published in the Government Printing Office, at Washington, D. C., 1900, be obtained from the Bureau of Insular Affairs, War Department, as said tariff is still in force, with the exception of the following modifications: Orders No. 139, Headquarters Department of Cuba, 1902: law relating to cattle; and law relating to coffee."

Copies of orders No. 139 are filed in the Bureau of Statistics, where they may be seen by interested parties.

The committee on bridges and general building construction has been chiefly engaged in drawing up a series of standard beams and tees and in the consideration of "equal and unequal angles." Their standard list of beams includes only 30 sections—a considerable reduction on the number formerly in use—and some of the leading firms have already announced that they are returning their rolls to comply with the committee's standard list.

In railway matters, there is a committee on rolling stock underframes; another on locomotives, with subcommittees on component parts and types, on steel plates, on tires, axles, and springs, on copper and its alloys, and a third on rails. The last-mentioned is divided into two subcommittees; the first, on railway rails, is engaged in drawing up a series of standard flat-bottom rails and bullheaded rails, the former beginning at 60 pounds per yard and the latter at 20 pounds per yard, and rising by increments of 5 pounds to 110 pounds per yard; while the second, on tramway rails, has agreed on a standard series advancing by steps of 5 pounds from 90 pounds to 110 pounds per yard, which has already been finally approved by the Board of Trade.

The committee on electrical plants is divided into four subcommittees. One—on generators, motors, and transformers—is collecting evidence as to how far standardization can be introduced in the construction of those machines and their component materials. Another—on temperatures—is conducting experiments to determine the ability of different insulating materials to withstand heat, and also the deteriorating effects produced by their exposure to heat over long periods. A third is considering the standardization of cables and of underground conduits other than tramway conduits, and is engaged in drawing up standard tables which should simplify and cheapen the manufacture of cables. The fourth is occupied in the preparation of standard tables and specifications for wires and with other matters directly affecting the construction of telegraphs and telephones.

The remaining committees are concerned with screw threads and limit gauges, with pipe flanges, and with cement, there being also a committee for publications and calculations and another for finance.

Some two dozen representatives of public departments—such as the War Office, the Admiralty, the Board of Trade, and the Indian

Office—are serving on these different committees, and the Government has further shown its appreciation of the work by coming to its financial assistance with a grant of £3,000 ($14,598).

MARSHAL HALSTEAD,
BIRMINGHAM, *July 9, 1903.* Consul.

FRUIT CROP OF HUNGARY.

On the 30th of May the agricultural examiners of the Hungarian Minister of Agriculture reported as follows on Hungary's prospects for a fruit crop:

Danube, left bank.—Partly good; partly poor. Mostly pears and apples; plums in places only.

Danube, right bank.—Medium crop only, except in early fruits. Vermin in places. Apples, pears, and plums in sufficiency.

Danube-Theiss Delta.—April frosts ruined crop, which is all falling from trees.

Theiss, right bank.—Early fruits have suffered; less stone fruits; cherries, apricots, apples, pears, and walnuts only in places; few plums; other fruits plenty. In Bereg and Borsod counties, plenty of plums in certain districts; less pears and apples. In Gömör County one district shows full, another medium, a third small crop. In Saros County pears will be fine, apples poorer, plums poorest. In Ung and Zemplin counties there will hardly be a medium crop, especially in the district of Nagy Mihaly, where the melons, squashes, and cucumbers were frozen.

Theiss, left bank.—Only three-fourths of a crop expected, owing to frosts.

Theiss-Maros Delta.—Cherries few, on account of spring frosts, medium crop of plums. Of soft-seed fruits, apples and pears are very promising in places.

Transylvania.—Apples and plums promising; others fallen, from spring frosts. Insects have attacked buds throughout Brasso County.

FRANK DYER CHESTER,
BUDAPEST, *June 8, 1903.* Consul.

AMERICAN CORN MEAL AND HOMINY IN FRANCE.

For years the United States tried to acquaint European countries with corn and its products, but as far as France is concerned made little headway.

The corn meal sold here is not as good as that sold in the United States. It is too coarse and hard. Our exporters send this kind for its better appearance, perhaps, but the result is a very fine hominy instead of meal. Besides, the yellow product is packed separately from the white, hence a loss of the better taste obtained by grinding together. Further, from a French standpoint it is not only inartistically packed, but, in some cases, imperfectly so. It is usually put up in 2-pound pasteboard boxes, through the mucilaged or glued ends of which the contents often filter. These boxes retail at 25 cents. To this price, if ordered from Paris—as is necessary in this city and throughout this district—freight must be added. The reason for such an exorbitant price is not easy to see, since the tariff entrance on meal is only 96.5 cents per 100 kilograms (220.46 pounds), making the duty on a 2-pound box actually less than 9 mills. Another reason why corn meal has not found favor in France is that the efforts for its introduction were made to get the middle and wealthier classes to like it instead of the working people. The directions, printed exclusively in English, explain the making of johnny cakes, griddle cakes, corn-meal mush, and gems; but corn bread, to which use 75 per cent of the consumption in the United States is put, to serve with the vegetable course, is not mentioned. The French desire economical food, but it must be nourishing, and they know the most nourishing is the cheapest. What better fulfills these conditions than corn and its products? But before it ranks in France with eggs, cheese, butter, wheat bread, and such food, upon which the people now principally live, it must be ground and packed differently and sold at least 50 per cent cheaper. If these conditions are fulfilled and the matter is pushed so that the working classes can become acquainted with the value of corn bread as a nutritive and economical accompaniment of all their vegetable dishes, there will be such a wholesale business done as to make the amount now sold but a dribble.

American grits, which are sold in few cities outside of Paris, are of a good quality, packed in 4½ and 5 pound sacks inartistically but securely tied. These retail for 1.75 francs (33.8 cents), an inexplicable contrast to that of corn meal. Perhaps one of the difficulties attending a large introduction of grits is that the French eat no early morning meal. Still there is no reason why they should not be taught to like a palatable dish at noon or evening.

THORNWELL HAYNES,
Consul.

ROUEN, *July 7, 1903.*

PETIT GRAIN, OR ESSENCE OF ORANGE LEAVES.

The industry of making essence by extracting the same from orange leaves dates back to the time when the Jesuit priests held sway over the Indians, more than one hundred and fifty years ago. In those times the trees were planted by the priests with an eye to their value for essence making. They imported the seeds of the oranges suitable for this purpose, for orange groves abound in the districts where the priests lived. To-day they form immense forests in those sections, which are full of small establishments for extracting essence. The natives for some time have looked upon essence of orange as a valuable healing ointment. They apply it to wounds and cuts—also to wounds of beasts where worms are likely to infect—declaring that it has such a penetrating force that it permeates every part of the flesh affected, curing the diseased parts very quickly. They also inform me that it is a fine hair tonic; by rubbing into the scalp it causes the hair to grow. Its application in the soap-making and perfumery industries are well known in commerce.

The essence is principally manufactured by French people. However, there are people of other nationalities, including the natives, who manufacture it. The orange peel is prepared for shipment and used for the purpose of making bitters, marmalades, etc. The essence is shipped in large, hermetically sealed cans, which are packed in strong wooden boxes. The law of this country grants free exportation to "petit grain" manufacturers. The quality of the essence seems to be very good, and most of it is shipped to France, from which country, I believe, it finds its way to the United States. Some is shipped to the United States direct, in which case, I am informed, it is made a little cheaper for the American market. I am also told that in some cases in gathering the leaves of the trees for essence of orange, large branches are cut and even trees felled. The wood thus wasted could be exported to the United States for the manufacture of toothpicks, etc.

I have been making reports along the line of raw materials of, and such things as are manufactured in, this country that would be suitable for export, for the reason that importers here assign as a difficulty in buying American goods the demand in the United States for cash in exchange for documents, whereas European exporters grant six and eight months' time from date of invoice, collecting interest for the time, drawing a draft against shipment, which is usually sent with the bill of lading through some bank, to be collected; and for the further reason that there is a disposition among the producers and exporters of these raw materials to ship them to good firms in the United States who would permit them to draw a thirty days' sight draft attached to the bill of lading and insurance to the amount of 50 or 65 per cent, the balance to be applied to the payment for goods that may be sent out here.

JOHN N. RUFFIN,
Consul.

ASUNCION, *June 3, 1903.*

AUSTRALIAN TREES.

The rapid decimation of forests in the United States has awakened the question as to the best manner of their restoration. It is thought profitable to consider the claims of trees not indigenous to America to be cultivated on the denuded lands, especially on hilly, rocky ground, or ground unfit for farming. On this account I wish to call attention to some of the native trees of Australia. These trees are being successfully grown in California and in other States similar in climate to California.

The forests of Australia generally have a monotonous appearance. This is caused by the presence everywhere of the *Eucalypti*, of which there are many species. There are, however, trees of other genera, notably of the *Angophora*, etc.

The parklike appearance of the open forests and the beauty of the many flowering shrubs win admiration in spite of the sameness of the trees. Even the dull, grayish blue of the foliage of the gum trees, when relieved by the yellow blossom of the wattle, including the graceful myall or the beautiful and shapely kurrajong, is not without its attractiveness. The trees for the most part are straight and cylindrical in the trunk, and when full grown their first branches are at a considerable height from the ground. The roots of the eucalyptus often lie at no great depth from the surface, an adaptation of nature to the peculiar climatic conditions of the country. The finest specimens of most of the timber trees—those yielding the most valuable timber—are found on ridges and hillsides and in places frequently too rough and stony for cultivation. This circumstance is in many ways fortunate for the state. In the course of settlement, when the rich plains are denuded of their trees and when scarcity will make timber more appreciated and valuable than it is at present, land not adapted for agricultural settlement will still be available for the cultivation of the finest trees. Among the many trees of commercial value, immense specimens of red gum (*E. rostrata*) and apple trees (*Angophora subvelutina*), on the northern river flats, mark the course of the streams, while on the ridges and mountain sides other species predominate, such as the white or she iron bark (*E. paniculata*), narrow-leaved iron bark (*E. crebra*), broad-leaved iron bark (*E. siderophloia*), mugga or red iron bark (*E. sideroxylon*), black butt (*E. pilularis*), white mahogany (*E. acmenoides*), tallow wood (*E. microcorys*), spotted gum (*E. maculata*), gray box (*E. hemiphloia*), red mahogany (*E. resinifera*), gray gum (*E. punctata* and *E. propinqua*), forest red gum (*E. tereticornis*), and Sydney blue gum (*E. saligna*). Neither must the turpentine (*Syncarpic laurifolia*), one of the most beautiful trees of the State, nor the bush box (*Tristania conferta*) of the northern rivers—a tree much in request for ornamental purposes—be forgotten.

Timber trees of New South Wales.

Description.	Specific gravity.	Resistance to breaking, or modulus of rupture.
		Lbs. per sq. in.
Spotted gum	0.995	13,300
Gray gum	.917	13,100
Flooded gum	1.178	14,800
Red gum	.995	6,900
Woolly butt	1.022	12,700
Black butt	1.067	13,700
White iron bark	1.177	16,900
Gray iron bark	1.182	17,900
Red iron bark	1.224	16,300
Forest oak	1.208	15,500
Turpentine	1.109	11,700
Stringy bark	1.141	13,900
Blackwood	1.129	10,300
Tallow wood	1.233	15,200
Australian teak	1.006	14,400
Mahogany	1.201	14,500
Forest mahogany	1.156	13,800
Swamp mahogany	1.216	12,100
White beech	1.008	15,600
Mountain ash	1.065	11,500
Rosewood	1.189	16,600
Pine	.868	8,800

The most of the *Eucalypti* are of very slow growth. Iron barks, of which there are four different species, commonly called red, white, black, and gray, may be classed as our best timber for engineering structural purposes, such as beams or girders for timber bridges and buildings, piles in harbors, and railway ties or sleepers. For the latter purpose, the timber has been known to last for from twenty-five to thirty-six years. It is a proven fact that iron bark is one of the best, if not the best, hard-wood timber in the world. From its very slow growth it could not be recommended for planting in the United States, nor could many species of the *Eucalypti* be recommended except *Eucalypti corynscalyx*, commonly called sugar gum. This specie of *Eucalypti* is peculiar to South Australia, especially Kangaroo Island, but has been largely planted in the State forests in that colony, and its rapid growth has been the subject of much comment during the past decade. Many of the sugar-gum trees in the Wirrabarra Forest Reserve have attained a height of from 90 to 104 feet and to a diameter of 34 inches in twenty-five years. It is about equal to the jarrah of West Australia, and in this respect it may be classed as about the fourth best timber of Australia. Its weight runs from 64 to 68 pounds per cubic foot. For railway ties or sleepers it is almost as good as iron bark or red gum. Mr. John Wright, civil engineer, to whom I am indebted for facts stated herein, says that he knows some to have been in use for at least twenty years. As a mine timber it is second to none, throwing out but little noxious gas. It has been used in the Moonta and Wallaroo mines for the past thirty-five years, showing little indication of decay. For its rapid growth and general utility I recommend it in preference to any other species of *Eucalypti*.

The Victoria Leader of May 23, 1903, has the following relative to this tree:

> The sugar gum thrives so well in a dry climate that the growth is quite remarkable. Trees (shown in an illustrated group) measured 29 feet in height at 4 years and 8 months. Another group of 3 years and 8 months measured 22 feet high, and trees in a very fine avenue, half a mile in length, at 2 years and 5 months old, 15 feet in height. It will be seen from these figures of actual measurements that the trees grew at the rate of 6 inches per month, or 6 feet a year, since the date of planting, and as very little growth is made during the first six months the subsequent progress must have been at a greater rate. Another avenue, three-fourths of a mile in length, on the same property, contains trees which at 1 year and 8 months old measured 9 feet in height. It is worthy of remark that while all other trees require the ground to be kept in a state of cultivation for many years, it is only necessary in the case of the sugar gums to cultivate for one year after planting. It has been unmistakably demonstrated by this experiment that forests of this handsome tree and useful timber can without difficulty be established on the driest portions of the Wimmera plains.

ORLANDO H. BAKER,
Consul.

SYDNEY, N. S. W., *June 6, 1903.*

MEXICAN LINALOE.

The following report was received from Consular Agent William Headen, of Puebla, June 20, 1903:

The Mexican linaloe (*Amyris linaloe*) is quite a large tree. The wood is soft and of a very light yellow color. The bark exudes a resin called "xochiopal." The wood has a very pleasant odor, which is compared to that of a mixture of essence of lemon and essence of jasmine, and upon distillation yields from 6 to 9 per cent of a very light yellow essence. This tree abounds in the southern parts of the

States of Puebla and Guerrero. Indeed, it is reported to grow in the tropical portion of the Pacific slope of Mexico at the same altitude as in its habitat in Puebla and Guerrero. A good deal of the essence comes to the city of Puebla, which is one of the chief markets in this country for the product, and is worth $75 Mexican silver ($28.78 gold) per arroba (4.263 gallons), or, in conformity with the metric system of weights, about $6.50 ($2.45 gold) per kilogram (2.2 pounds). The process of distillation is careful, but very primitive and inexpensive. "Trozas," or sticks of the linaloe about the length and thickness of medium-size cord wood, were supplied to the laborers, each of whom has his little pen or inclosure contiguous to the still. These laborers reduced the sticks to small, thin chips, and these chips, without further process, were placed in the "alembique," or still. The linaloe essence is the article exported. It comes to this city in 5-gallon kerosene-oil cans and, in a crude way, in bottles. Here the more prudent exporter has it filled into small tins, which are packed in strong, wooden cases. The major part goes to Hamburg and some to Havre, and now and then a shipment goes to New York. It is largely in demand as the base of exquisite perfumes.

ANNUAL SALES OF WINES IN GERMANY.

Now that the annual spring auction sales of wines in the wine-growing districts of Germany have come to a close, a résumé of the results of these sales, which are of great importance and interest to both the wine producers and the wine merchants, may be of interest.

In the first place, it may be stated that, on the whole, the inclination to buy was not so marked as in former years, so that large quantities of wine which had been put up at auction had to be withdrawn for lack of bids, while the prices at which most wines were bid in were rather low. There were, of course, some notable exceptions in cases of wines from vineyards of highest repute.

The cause of the poorer results of the auction sales may be found in the continued general commercial depression, as also in the fact that the greater bulk of the wines offered were those of the vintages of 1901 and 1902. Neither of these was of a quality to stimulate high bidding, the latter suffering under the uncertainty of the new "wine law," the provisions of which were so indefinite that many wine producers hesitated to give to the vintage the necessary treatment, fearing thereby to come into conflict with the law. The vintage in its natural state, without the necessary addition of sugar in limited quantities, was so acrid as to be of little commercial value.

The following table gives an idea of the sales effected at auction this spring, according to the various wine-growing districts of Germany, as compared with the preceding year:

District.	1903.		1902.	
	Quantity.	Price.	Quantity.	Price.
	Gallons.		*Gallons.*	
Haardt Hills	1,437,375	$541,255.79	1,024,312	$617,702.34
Middle Rhine	19,125	12,280.80	30,000	15,065.40
Moselle	613,312	353,146.78	486,375	858,232.76
Nahe	327,000	108,342.36	258,000	88,778.76
Rheingau	489,000	297,573.78	272,250	276,940.37
Rhenish-Hesse	738,375	308,985.88	642,375	338.859.64
Total	3,624,187	1,621,585.39	2,713,312	2,195,579.27

WALTER SCHUMANN,
Consul.

MAINZ, *June 25, 1903.*

DRIED SUGAR BEETS AS FOOD FOR FARM ANIMALS.

According to an article in the Frankfurter Zeitung of June 29, 1903, in the drying of sugar beets—a process which even under the most unfavorable conditions has proved profitable—German agriculture has found a means to prevent the overproduction of sugar.

According to the Blaetter fuer Zuckerruebenbau, the Dingelbe Sugar Factory, near Hildesheim, in the province of Hanover, dried 30,000 centners (3,300,000 pounds) of beets in March, 1901, and, from the crop of 1902, the frozen beets from 60 morgen (38 acres) of land by means of a Petry & Hecking drum apparatus. One centner (110 pounds) of dried beets was produced from 4½ centners (495 pounds) of chopped raw beets. The dried beets were sold at a fixed price of 5 marks per centner ($1.19 per 110 pounds). The cost of drying was 1.40 marks (33 cents), so that at 5 marks ($1.19) per centner of dried beets each centner of raw material brought 80 pfennigs (19 cents). Other experimenters have received 6 marks ($1 43), which means 1.02 marks (24 cents) for each centner of raw beets. Professor Lehmann, in Goettingen, claims, however, that in comparison with wheat bran and maize the nutritive value of dried beets is 7.30 marks ($1.74), or 1.31 marks (31 cents) per centner of raw beets used. Although 7.30 marks ($1.74) has not yet been obtained for the article, those farmers who, instead of selling their dried beets, use them for feed practically obtain this price in full through not using the equivalent amount of dearer materials. To this price of 1.31 marks (31 cents), moreover, must be added the value of the leaves and heads, which, when used as green fodder, are estimated to be worth 40 marks ($9.52) per morgen (0.63 acre). The surplus of leaves and heads not used as green feed may also be dried.

At Dingelbe no difficulty whatever has been encountered in keeping dried beets which had been promptly sacked and stored.

As soon as a price can be obtained for dried beets which is equivalent to that fixed for other feed materials, they will probably at once become an important article of trade. As its nutritive value makes it a suitable substitute for maize, the importation of the latter can then be correspondingly lessened. Thus, in future, German farmers can, at times when sugar prices are low, utilize their crops more profitably by drying the beets for use as cattle feed.

GEORGE H. MURPHY,
Consular Clerk.

FRANKFORT, *June 30, 1903.*

RUSSIA'S NEW SUGAR LAW.

The new sugar law, sanctioned by His Majesty this 12th/25th day of May, 1903, has just been published by the Messenger of Government.

The principal changes which have been made by the enactment of this law are:

1. The yearly production for the home market has been increased from 60,000 poods (2,166,720 pounds) for each mill to 80,000 poods (2,888,960 pounds).

2. An increase of the home consumption is introduced by a measure of denaturalization—in using residuum for feeding cattle and for technical purposes. This enactment is made for the term of three years.

The articles of the law read as follows:

I. (1) For each period of sugar refining the amount of the general normal (useful) production is fixed by the committee of the ministers according to the report of the Minister of Finance.

(2) If the amount of the real sugar production, fixed for a certain period of sugar refining, does not exceed the amount of the general normal (useful) activity, the surplus of the real activity over the amount fixed for the home market is apportioned to the separate works in proportion to their real activity, in addition to the 80,000 poods (2,888,960 pounds) for each work.

(3) If the amount of the real sugar activity, fixed for a certain period of sugar refining, exceeds the amount of the general normal (useful) activity, the surplus of the real activity over the amount fixed for the home market is apportioned to the separate works on the following basis:

(*a*) The part of the surplus which constitutes the difference between the real and the general normal (useful) activity is apportioned exclusively to such works as have exceeded the amount of the normal (useful) activity, determined for them (par. 4), in proportion to the excess allowed to each work separately.

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(*b*) The remainder of the surplus is apportioned to all the works in proportion to the real activity of each work, in addition to the 80,000 poods (2,888,960 pounds), but after deducting that surplus already apportioned according to article *a* of this paragraph.

(4) The normal (useful) activity of each work for a certain period of sugar refining is the quantity obtained by the assignment of the general normal (useful) activity among separate works in proportion to their capacity. The normal activity of a work must not be counted below 80,000 poods (2,888,960 pounds).

(5) As basis for the determination of the capacity of the works must be considered the amounts of their activity for the ten preceding periods, excluding, however—out of the period 1896–97 to 1902–3—that amount apportioned to them of the free reserve of the foregoing periods, and the production of the following years, beginning with 1903–4, in accordance with article *a*, paragraph 3.

(6) The activity of the works, mentioned in the foregoing paragraph (5), is to be considered equal to—

For works of eight and more periods of activity, the average arithmetical amount out of three greatest productions.

For works having five, six, and seven periods of operation, the average arithmetical amount of two greatest productions.

For works of two, three, and four periods of operation, of the greatest production.

For works of one period of operation, the production of this period.

(7) The productiveness of new works and of such of the existing works as have been suspended during the last ten periods is determined, for this first period of the work or renewal of work, by the production of this period—however, not above 160,000 poods (5,777,920 pounds).

(8) The productiveness of the works, rebuilt with the view of enlarging the same, is determined either according to rules established for the existing works (pars. 5 and 6 of Sec. I) or, in cases of special requests by the work owners, according to rules relating to newly erected works (par. 7, Sec. I, and art. *b*, Sec. VI).

(9) The obligatory intangible reserve of sugar is apportioned to the separate works, in cases when the real production of sugar does not exceed the general normal (useful) production, according to the stipulations of paragraph 2, and in other cases according to rules fixed by article *b* of paragraph 3.

(10) The remainder of the free reserve left at the works at the end of a certain period is apportioned, at the work owners' wish, in the amount fixed by them, to the production of the new period, deducting it from the accounts of the surplus. This rule refers to the free surplus remaining at the end of the period 1902–3.

(11) Stone buildings of the cask-sugar and beet-sugar refineries, working outside of their capitals, may be mortgaged as security for revenues, according to the stipulations of article 4, paragraph 9, Supplement I to paragraph 339 of excise rules, and on special permit by the Minister of Finance, in each separate case.

II. Article 3 of the remark to article 966 of excise rules (edition, 1901) to be annulled.

III. The restriction mentioned in paragraph 7, Section I, is not to be extended to the newly established works the erection of which was begun before this law is published in the Code of Laws and Orders of the Government, and which shall begin operation not later than the period of sugar refining for 1904–5, and to determine their capacity during the first period of their activity.

IV. In determining, according to paragraphs 5 and 6 of Section I, the capacity of the works for the periods 1903–4 and 1904–5, their production in the periods preceding 1895–96 are not to be taken into account.

V. The capacity of works reconstructed in 1900–1901, 1901–2, and 1902–3, with the view of increasing their capacity, is to be established for the periods of 1903–4, 1904–5, and 1905–6, on special requests on the part of their owners, in the amount of the average production of sugar in twenty-four hours by each of these works during the period of 1902–3, multiplied by the average number of days of work of all the works of the Empire during the same period.

VI. The Minister of Finance has the right to issue, when necessary and upon agreement with the State comptroller, rules determining—

(*a*) The order of application of the regulations stipulated in paragraphs 3 to 10 of Section I and in Sections III and V.

(*b*) Conditions upon which the capacity of the works, rebuilt with the view of enlarging their production, can be determined on basis, fixed for newly erected works, as well as according to stipulations of Paragraph V.

VII. It is ordained as a temporary measure during three years (1903–1905)—

(1) The Minister of Finance has the right to allow, on request of sugar refiners, the sale of the residuum of sugar refining, after preliminary denaturalization, for feeding cattle and for technical purposes, refunding in such cases the excise and additional duty.

(2) The conditions upon which it may be permitted sugar refiners to avail themselves of the exemption mentioned by the foregoing paragraph (1) are determined by rules issued by the Minister of Finance, upon agreement with the Minister of Agriculture and Domains and the State comptroller. These rules are referred by the Minister of Finance to the Senate, to be published for public knowledge.

(3) The sugar contained in the denaturalized products, mentioned in article 1 of this section (VII), is not to be included in the amount fixed for the home market for a certain period of sugar refining.

VIII. The regulations stipulated in articles 1 to 10 of Section I and in Sections III to V of the present law enter into force on September 1/14, 1903.

W. R. HOLLOWAY,
Consul-General.

ST. PETERSBURG, *June 26, 1903.*

INDIA RUBBER IN AUSTRALASIA.

Rubber in all stages of manufacture may be seen in the show windows of some of Sydney's large dealers in that useful product. A large portion of it comes from New Caledonia, New Guinea, and the Fiji Islands. It is pronounced by experts to be of very fine quality, comparing favorably with that from South America. It is claimed that it might be equal to the best if properly treated before being put upon the market.

As the cultivation of the rubber tree is comparatively a new industry, the highest scientific treatment of the crude material could hardly be expected.

The production of rubber in the semitropical islands of the Pacific is destined to become a source of immense wealth, as the tree producing it is well adapted to the soil and climate.

ORLANDO H. BAKER,
Consul.

SYDNEY, N. S. W., *June 6, 1903.*

NEW RUBBER PLANT.

The Bureau Reuter states that the firm Holt, of Liverpool, which does a large trade with West and Southwest Africa, recently received a species of plant, hitherto unknown, that produces rubber. It was found in the French Kongo territory. The plant grows underground. Mr. Holt is of the opinion that it will probably be found in English West Africa. If the bark of the plant is broken, the rubber keeps the pieces together and is of extraordinary elasticity. The rubber is directly beneath the bark and of unsurpassed quality. The sender of the specimen thinks it is *Landolphia tholloni* or *Clitandra gracilis*. Ordinarily, the roots when about 1 month old contain from 6 to 6½ per cent of rubber; if the bark is removed the percentage is from 12 to 15. The sample has been sent to Nigeria for the purpose of ascertaining whether it grows there also.

RICHARD GUENTHER,
Consul-General.

FRANKFORT, *June 20, 1903.*

PORTLAND CEMENT FROM SLAG.

Portland cement has been made from blast-furnace slag for several years in various cement works in Germany, Luxemburg, and Belgium, and has yielded very satisfactory results, especially in regard to quality. Negotiations are being carried on with some blast-furnace works with a view to the introduction of the slag-cement industry into England, Austria, and France. In some respects a blast works has a considerable advantage over other Portland-cement factories because the motive power for the cement works can be supplied by a blast-furnace gas motor with electric transmission, the rubble or waste coke from the blast furnaces can be utilized in the cement kiln, and the principal raw materials—namely, the granulated slag and the limestone—are close at hand. Besides, there are other minor advantages.

Portland slag cement has also some advantages over natural Portland cement; for, while the yield from the raw materials when the former is used is about 80 per cent, the yield when the ordinary raw materials are used is seldom more than 60 per cent. As the cost of production per ton of raw materials is nearly equal in both cases, a saving of about 20 per cent in fuel, labor, etc., is effected in the case of slag cement. Besides this, Portland slag cement is more trustworthy and more regular, and its manufacture can be more easily controlled than that of the so-called natural Portland cement, because the principal raw material—namely, the blast-furnace slag—is, as a rule, a regular product whose chemical composition is easily controlled; consequently, any alterations which are liable to take place are known beforehand and precautions can accordingly be taken in time. This is not the case when the natural raw materials are used.

Some recent tests with Portland cement from blast-furnace slag, made in the municipal laboratory at Vienna, showed that mortar composed of 3 parts of sand with 1 part of this cement gave the following results:

1. After seven days' hardening.—Tensile strength, 383 pounds per square inch; strength of compression, 3,880 pounds per square inch.

2. After twenty-eight days' hardening.—Tensile strength, 551 pounds per square inch; strength of compression, 5,411 pounds per square inch.

OLIVER J. D. HUGHES,
Consul-General.

COBURG, *June 27, 1903.*

TOBACCO IN BELGIUM.

It is well known that the Belgians are great smokers. To arrive at a better understanding of this fact, it is sufficient to say that the farmers devote 4,942 acres each year to the cultivation of tobacco; and, notwithstanding the yield of 18,700,000 pounds, nearly 21,000,000 pounds are imported.

In 1901 there were cultivated in Belgium and imported a total of 38,966,200 pounds of tobacco, making 6.6 pounds per capita of the whole population. Besides this, there were imported 59,400 pounds of cigarettes.

The import duty on tobacco is as follows, per 100 kilograms (220.46 pounds):

Unmanufactured:	
Stripped	$14.48
Other, including midribs and tobacco substitutes	10.62
Manufactured:	
Cigars and cigarettes	115.80
Other, including tobacco extracts	23.16

In addition to the above-mentioned duty on tobacco not manufactured, an excise duty of $2.90 per 220.46 pounds is imposed.

The principal importers are:

Florent Pauwels, Antwerp.
Paul Van Nyen, Antwerp.
Hartog & Delannoy, Brussels.
M. Hartog, Brussels.
Van de Walle frères, Ghent.

FRANK R. MOWRER,
Consul.

GHENT, *June 29, 1903.*

ARTESIAN WELLS IN NEW SOUTH WALES.

The first experiment made in boring artesian wells in New South Wales was in 1879 at Killara Station, in the western part of the State. Water was found at a depth of 140 feet, shooting up 26 feet. Thereafter, artesian wells multiplied, being bored both by the government and by private persons.

The water in the northwest was found in cretaceous rocks, but some of the best wells have pierced rocks of the Triassic age, as Coonamble, Moree, Gil Gil, and Eureka. The deepest is at Dolgelly (4,086 feet). The heat of the water is 130° F. These wells, for the most part, are situated near traveled roads in districts destitute of streams. Water is furnished to stock at the following rates:

		Cents.
Horses, cattle, and camels	per head...	2
Goats and hogs	do......	.5
Sheep	per 100 head...	25

Water is sold for domestic uses at 12 cents per 100 gallons. The water of artesian wells is used also for wool scouring, giving fine results. The wells are leased to private parties, the highest bidder taking the property in charge under conditions fixed by law.

At some of the wells the water is used for experimental farm irrigation. Lucern, corn, wheat, tobacco, sugar cane, date palm, bananas, and other tropical products have been grown on land thus irrigated. Unfortunately, thus far, water can not be obtained at will nor in quantities necessary for irrigation, except in limited areas.

Sheep and cattle during the past year have died by thousands from lack of water and grass. Of 60,000,000 sheep it is estimated that only 20,000,000 have survived.

A great deal of talk is heard as to methods of conserving the waste waters of rainy seasons that now become destructive floods rushing to the ocean, and plans have been taken to form extensive reservoirs in various parts of the State subject to drought.

The deepest well (4,086 feet) is at Dolgelly and cost $51,733; it yields 750,000 gallons daily. The lowest points at which water was found were at Tonngerina (164 feet) and Tatabulla (209 feet). The former yielded 120,000 gallons daily and cost $3,714; the latter yielded 100,000 gallons daily for some time, but fell off to 7,500 gallons; it cost $3,670. The Tonngerina shut down; cause not given.

ORLANDO H. BAKER,
Consul.

SYDNEY, *June 6, 1903.*

JAPAN AND THE YANGTZE TRADE.

It is evident that the statesmen and capitalists of this country (Japan) intend to take a prominent part in the development of trade and commerce on the Yangtze. Many of Japan's leading lines of steamers are emulating each other and foreigners in their efforts to establish trade relations at all available points on the Yangtze—China's greatest river. The contest that is sure to come will be for a long time between England, Germany, and Japan. A day is to come, however, unless appearances are deceiving, when United States ships will be found all along the Yangtze docking and disposing of their manufactured products.

The following table shows the percentage of shipping on the river:

	Per cent.
British	51.2
German	17.5
Chinese	17.1
Japanese	10
American	1.6
Russian	.6
All others	2

SAMUEL S. LYON,
Consul.

KOBÉ, *June 1, 1903.*

BUTTER INDUSTRY IN THE ARGENTINE REPUBLIC.

During the years 1895–1899, inclusive, 9,027,027 pounds of butter were exported from the Argentine Republic, an average of 1,805,405 pounds per year. In 1900 the exports of butter amounted to 2,322,663 pounds, in 1901 they increased to 3,322,391 pounds, and in 1902 they reached a total of 9,021,020 pounds,* an increase of 170 per cent on the previous year and of 400 per cent on the average of the five years 1895–1899. For the first three months of the current year, the returns show an exportation of 5,028,815 pounds† of butter, about half of the amount exported during the whole of 1902.

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* Official figures, 4,125 tons.

† Official figures, 2,024 tons.

The following table shows the amount of Argentine butter imported by various nations during the five years 1895–1899. Detailed figures for 1902 and the first three months of 1903 are not available.

Country importing.	1895–1899.	1900.	1901.
	Pounds.	*Pounds.*	*Pounds.*
Africa	4,986	....	....
Germany	54,606	....	....
Belgium	41,800	....	110
Bolivia	68	....	....
Brazil	544,573	23,599	40,172
Chile	147	....	....
Spain	11,774	....	220
France	5,962	....	....
Italy	2,244	....	....
United Kingdom	8,355,246	2,298,789	3,281,889
Uruguay	5,621	275	....
Total	9,027,027	2,322,663	3,322,391

The price of butter at the creameries here may be estimated—allowing a good margin of profit to the dairyman—at about 16 cents in United States currency per pound.

At retail in this city, the average price of butter per pound in December for the years 1899–1902 has been:

	Cents.
1899	19⅛
1900	19⅜
1901	20
1902	18⅝

From these figures and from a study of railroad rates for the transportation of butter, it seems safe to fix the average price of Argentine butter f. o. b. at 18 cents per pound.

The following table shows the prices ruling in the London market during December in the years 1900–1902 (reduced approximately to United States currency per pound) for butter imported from various countries:

Imported from	1900.	1901.	1902.
	Cents.	*Cents.*	*Cents.*
Holland	24 to 26	24 to 24⅞	22⅜ to 24⅞
France	25⅛ to 27⅛	23 to 24⅞	22⅝ to 25⅛
Denmark	26⅜ to 28⅛	24 to 25⅜	24⅞ to 26⅛
Russia	17⅝ to 21⅛	15⅛ to 26	17⅝ to 23
Canada	16⅜ to 21⅝	16⅝ to 22⅛	20⅛ to 23
Australia	15⅛ to 24⅜	15⅛ to 24	20⅛ to 24⅜
Argentina	16⅜ to 24⅜	23 to 24⅜	23⅛ to 24⅜

From the foregoing it will be seen that Argentine butter has improved in price in the London market very rapidly in the last three years, until it now stands second as regards demand, and that the average price—approximately 24 cents—leaves a high rate of profit to the Argentine exporter.

It is only natural, therefore, that the dairy industry should be increasing rapidly in importance here, and that it should ultimately reach enormous proportions. By conservative estimates the average yield of milch cows is 4 quarts per day. Assuming that there will be two hundred and fifty milking days per year, each cow will give 1,000 quarts of milk annually. With improved machinery, this milk will yield from 3.2 to 3.3 per cent of butter, or, say, 65 pounds per year.

At this rate the amount of butter exported during 1902 (9,021,026 pounds) would represent the yield from 138,000 cows, or thereabouts. Unfortunately, no statistics exist with regard to the home consumption of milk and butter; consequently, no very accurate estimate can be made of the number of cows now in use for dairy purposes in the Argentine Republic. Assuming that there are 700,000—apparently a fair estimate—there remain about 8,000,000 cows which could be utilized for dairy purposes.

The average cost of a small creamery may be estimated as follows:

500 cows at $25 each=$12,500, at 8 per cent per annum	$1,000
500 hectares of land, rented at $2.50	1,250
10 peons (laborers), at $16 per month	1,920
House, cart, horses, extra peons, etc	660
Unforeseen loss in animals, taxes, etc	770
Coal, oil, machinist, etc	440
Interest on machinery	130
Total	6,170

The yearly yield may be estimated as follows:

500 cows at 4 quarts of milk per day for 250 days=500,000 quarts, yielding, at 3.15 per cent, approximately 31,500 pounds of butter at minimum price of 16 cents per pound	$5,040
500 calves less 20 per cent=400 at $6.60	2,640
Total	7,680

This would leave a yearly profit of, say, 24 per cent on the capital invested. Allowing for some exaggeration in the estimates of yield, one can safely put the profit at 20 per cent.

Much is being done toward improving the breed of cattle in this country and the milk-producing stock will doubtless soon be greatly bettered. The Durham breed is the principal base for the crossing of Argentine cattle and will in a few years predominate on the estancias, or estates. The splendid results obtained from the Durham breed for dairy purposes are well illustrated on the estancias of Messrs. Santamarina, at Tandil. In a little less than six months, 5,000 mixed or mestiza Durham cows (natives crossed with Durhams) have been tamed. From these, 3,750 good milch cows have been obtained, each giving an average of over 4 quarts a day. In a short time all 5,000 will be giving the same results and the dairy will produce 330,000 pounds of butter per year.

Some of the leading estancieros (farmers) have gone in for crossing the Durham and Flemish breeds and have obtained excellent results.

The principal dairies in the country are:

The Granja Blanca, belonging to Mr. E. Fynn, established some twelve years. It has two establishments besides the factory in Buenos Ayres. The first, at Las Heras, had on December 31, 1902, 2,455 milch cows and on the Escobar farm there were 2,492. The returns from the Las Heras farm for 1902 were:

Breed.	Yield per cow.		Average of butter.
	Per year.	Per day.	
	Quarts.	*Quarts.*	*Per cent.*
Flemish	1,522	4.1	2.9
Dutch	1,305	3.5	3.2
Durham	1,632	4.4	3.2

This establishment turns out the following products: Pasteurized milk, maternized milk for rearing children, sterilized milk in bottles and tins for travelers and invalids, concentrated and condensed milk, kefir, sweet milk, butter, soap, casein, and milk liqueur.

The Martona, at Canuelas, is another establishment which ranks high. It belongs to Mr. Vincente L. Casares, and, like the Granja Blanca, has shops all over Buenos Ayres.

The Company La Union Argentina, at Buenos Ayres, makes butter from milk and cream sent to it from all parts of the Republic. It has lately purchased one of the largest Radiator separators in the world, capable of handling from 2,500 to 3,500 quarts of milk per hour.

La Marina owns a farm at Las Palmas, with 9 dairies and 1,050 Durham cows, and there are 1,600 more when any of the others get dry. It also possesses a creamery in Zapiola, with a cheese factory; about 300 cows are milked there.

A group of estancieros sends milk to the Progreso and Tandilera dairies. The factories make the butter for 1.2 cents per pound, and, in case of export, they guarantee the estancieros a minimum of $19.54 per 100 pounds. The Progreso turns out 2¾ tons per day and the Tandilera 2½ tons.

The Santamarina Creamery, in Tandil, has 3,000 cows and will shortly work 5,000; there will be 24 dairies spread over 24½ leagues.

The dairy industry is now spreading from the Province of Buenos Ayres to other parts of the Republic; Cordoba, Santa Fe, and Entre Rios are all going in for the business. Large orders are being placed with importers of dairy machinery.

EDWARD WINSLOW AMES,
Chargé d'Affaires ad interim.

BUENOS AYRES, *May 18, 1903.*

DELAY IN SHIPPING GOODS TO MALTA.

In recent reports upon American flour in Malta,* I referred to the increasing demand for that article. It must not, however, be understood that the trade is absolutely secured to us. In conferring with firms here who are interested in the importation of flour, I have discovered an evil which, if not remedied at once by American millers, will eventually result in a large dropping off in their sales. I refer to tardy shipments. Maltese buyers are complaining greatly of the delay on the part of railway companies in the United States in delivering goods at the docks in New York, on account of which they are unable to rely upon even an approximate date of arrival here. It has often happened that flour ordered to be forwarded to Malta at stated intervals has been so long delayed by transportation companies in the United States that the different consignments were received simultaneously. When it is considered that the Maltese buyer has to figure very closely in order to make even a small margin of profit and has to look ahead in order to place his goods upon arrival, it will be understood, perhaps, how inconvenient it is for him to suddenly receive two or more orders en masse instead of at intervals, as ordered. Lack of promptness in delivery at New York docks also causes loss by reason of fluctuation in values. As a rule, the Maltese buyer has a great deal of patience, but I hardly believe it will last in this matter, and unless American millers and others interested in the trade speedily effect a change in present methods of shipping I am afraid several houses here will transfer their patronage to other countries. I have a case before me which illustrates this point: A consignment from a St. Louis house has just arrived after three months' delay. It can not be said, however, that any blame for the loss of time rests with the steamship company, as its service is very satisfactory.

This is a peculiar market and has to be handled very carefully to avoid loss. No one knows this fact better than the Maltese buyer, and when he settles his accounts satisfactorily it does seem that our sellers might assist him, at least to the extent of filling orders and delivering as directed. It must be remembered that the Maltese merchant does not order flour from the United States just for the sake of storing it up. Here, as in the United States, its sale is regulated by market opportunities.

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*See ADVANCE SHEETS Nos. 1570 and 1671.

I trust this matter will be looked into at once by parties interested.

JOHN H. GROUT,
Consul.

VALLETTA, *June 8, 1903.*

PETROLEUM INDUSTRY OF ROUMANIA.

The production of petroleum in Roumania is steadily increasing. It has grown from 56,000 tons in 1893 to 310,000 tons in 1902. Three companies practically control the entire industry, viz, the Steana, the International Petroleum Company, and the Telega Oil Company, the first participating with 45 per cent and the two others with 10 per cent each of the total production.

The export of petroleum and its products also shows a large increase. From 1901 to 1902 this increase was nearly 32 per cent, as the following table will show:

Description.	1901.	1902.
	Tons.	*Tons.*
Crude oil and refuse	30,800	23,100
Kerosene	15,500	32,300
Gasoline	8,300	16,300
Total	54,600	71,700

Kerosene and gasoline go principally to Germany, Great Britain, Norway, Bulgaria, and France, while the greater part of the exports of crude oil is taken by Austro-Hungarian refineries.

In 1900 the rapidly increasing importation of Russian and Roumanian petroleum into this Monarchy alarmed the oil producers of Galicia. They petitioned the Government to afford them more adequate protection, and finally succeeded in having the duty on oil raised from 2 florins to 3.5 florins gold (96.5 cents to $1.69) per quintal;* but as Roumania had by treaty secured the right to import into Austria-Hungary a quantity of crude petroleum not exceeding 20,000 tons per annum at the old tariff rate, this change affected that country only in so far as it made a material increase of such imports impossible. In 1899 the Roumanian importations of crude oil into Austria-Hungary amounted, in round numbers, to 16,000 tons. They reached almost 20,000 tons in 1900 and since that time have remained stationary.

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* 1 quintal=220 pounds.

The high prices commanded by gasoline in 1901 greatly favored Roumania's export of that article. When, after a year of intense activity, the quotations receded and the market finally experienced a general collapse, recourse was had, in the fall of 1902, to the creation of a cartel. This organization fixed the price of gasoline at 8 francs per quintal ($1.54 per 220 pounds, or $15.40 per long ton), and has since maintained it at that figure.

The consumption of liquid fuel has increased in Roumania from 433 tons in 1890 to 40,000 tons in 1902. The experiments made with this fuel by State experts have given the most satisfactory results, and its general adoption by the Government for railway and marine purposes is reported to be assured.

While the Roumanian petroleum industry has attained to considerable importance during the comparatively short period of its existence, there can be no doubt that in these days of low prices and intense competition, due to Russian and Austrian overproduction, it needs all the encouragement which the home Government can give it.

FREDK. W. HOSSFELD,
Consul.

TRIESTE, *May 28, 1903.*

INDUSTRIAL CONDITIONS IN PERU.

ELECTRICAL ENTERPRISES.

Of late years there has been a notable extension of electric force and electric lighting in Peru. Lima is now lighted throughout by electricity, and in many establishments the machinery is driven by electrical power. A number of the cities in the interior also enjoy the benefits of electric lighting.

Two syndicates have recently been formed in Lima for the construction of overhead-trolley tramways. One is La Compañía Anónima Tranvía Eléctrico de Lima y Chorrillos. This company proposes to build an electric tramway from Lima to Chorrillos, passing through the small boroughs of Miraflores and Barranco, lying between Lima and Chorrillos. The distance is about 14 kilometers (8.6 miles). The line will be double tracked and the cars will run at intervals of about ten minutes. The capital is £80,000 ($389,320), divided into shares of £1 ($4.86) each.

The other company is called Ferrocarril Eléctrico de Lima y Callao. This line is also to be double tracked and will connect Lima and Callao, a distance of about 13.7 kilometers (8.5 miles). This company also intends to construct tramways in the city of Callao. Its capital is £100,000 ($486,650), and it intends to compete with the existing railways for the carrying of freight as well as passengers between Callao and Lima. The passenger trains are intended to be run, like those of the other company, every ten minutes.

The Government gives to these two syndicates a privilege for sixty-six years. The two companies are to be free of taxes, and are to import free of duty for the term of two years all material for their own use. At the end of sixty-six years, the tramways, rolling stock, and all material become the property of the Government, free of cost.

Both the electric-tramway companies have made arrangements with American manufacturers for the supply of the plant and material to equip the lines, and it should soon begin to arrive, as the lines must be finished and in working order within two years from the date of contract with the Government.

AMERICAN RAILWAY ENTERPRISE.

The American syndicate now interested in the Cerro de Pasco, Morococha, Yauli, and other mining districts, which is constructing the railway from Oroya to Cerro de Pasco, has discovered that, in view of the immense increase in the quantity of ores that will be exported when the railway is concluded and the new machinery set up, the present railway between Callao and Oroya will not be able to handle the traffic. The managers have therefore directed their attention to the building of a line which, starting from a given point on the railroad under construction from Oroya to Cerro de Pasco, would run northward through some of the richest mineral and agricultural districts of Peru to the port of Paita. This line would be of the greatest importance to the country and would probably yield good results to those investing capital in it.

It would allow the export of agricultural and mineral products from districts now virtually unproductive on account of the high cost of transport; it would increase a hundredfold the production of those localities which, owing to the high rates of freight, can now scarely hold their own; and, lastly, it would bring about an enlarged consumption of foreign goods, because the greater value of the exportations would bring about a greater demand for imported articles. Besides, Paita being a first-class port, untrammeled by the heavy dock charges and other expenses ruling in Callao, foreign goods would pass by this route up to the center of Peru at a much lower cost than if landed at Callao. The latter port, to maintain its importance, would probably find it necessary to erect bonded warehouses in which to store goods coming via the Panama Canal from the United States and Europe. These goods could then be reshipped to Ecuador and even to northern ports of Chile.

The outlook for trade and for the employment of foreign capital is certainly encouraging. The long period of peace which the country has enjoyed has undoubtedly started it on the road of progress and has brought about a state of prosperity unknown in this Republic for years.

GOLD STANDARD.

Congress passed a law on December 14, 1901, adopting a coin called the Peruvian gold pound (equivalent in size, weight, and fineness to the British pound sterling), demonetizing silver, and making gold the legal tender for all sums over 100 silver soles.* This law was put into effect on March 1, 1903, and now the gold standard is firmly established in this country. Ten silver soles are accepted and paid by the banks and everyone as the equivalent of the Peruvian or British sterling pound. The law also prohibits the importation of silver soles or silver coin, and no person coming into the country or passing from one port to the other can take on shore more than 10 silver soles at any one time. If he does, the silver coin is taken possession of by the Government, melted into bars, and returned in that form to the owner of the confiscated coin.

The Government during the past two years has melted down over 1,000,000 soles, converting the same into ingots and selling the silver in Europe for British sovereigns. By reducing the amount of silver coin in circulation, the Government expects to keep the gold in proportion to silver as £1 to 10 soles, or in British currency at the rate of 24d. (48 cents) to the silver sole.

The amount of silver in circulation in the country does not exceed the sums required for daily use and minor transactions; and in view of the undeveloped state of the natural wealth of Peru on account of the lack of foreign capital and foreign immigration, one may look forward to greater commercial activity and general improvement in the country.

JOSEPH C. CREE,
Vice-Consul.

CALLAO, *May 8, 1903.*

CHANGES IN VENEZUELAN IMPORT DUTIES.

The President of the Republic of Venezuela, by virtue of the power given by article 13 of the customs-tariff law, in order to lower certain schedules of said law when unforeseen causes make necessary such alteration, has resolved that from this date the following merchandise will pay tariff duties as follows:

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* 1 sole = 48.6 cents.

Article.	Duty.	
	Bolivars.	*Cents.*
Sardines, pressed, in oil, or in any other form, shall pay duty as second class, per kilogram (2.2046 pounds)	0.10	1.93
Alimentary preserves, as third class ... per kilogram	.25	4.82
Surgical and dental instruments, those of anatomy and other sciences, patent medicines and chemical products, leather-lined buckles, and brushes for teeth, hair, clothes, and shoes, as fourth class ... per kilogram	.75	14.37
Buttons of all kinds (except of silk, silver, and gold) and rice toilet powders, as fifth class ... per kilogram	1.25	24.13

LOUIS GOLDSCHMIDT,
Consul.

LA GUAIRA, *June 10, 1903.*

TARIFF CHANGES IN NORWAY.

Consul-General Henry Bordewich sends from Christiania, June 5, 1903, a list of recent changes in the Norwegian tariff, as follows:

Article.	Old rate.		New rate.	
Metal brushes:	*Kroner.*		*Kroner.*	
For boilers and machinery ... per kilogram (2.2 pounds)	0.07	$0.0187	0.15	$0.0402
In wood or metal ... do	.40	.107	.50	.134
Champignons ... do	1.00	.268	.60	.1608
Pianos:				
Grand ... each	100.00	26.80	150.00	40.20
Upright ... do	60.00	16.08	90.00	24.12
Apparatuses for technical measurement	....	....	10 per cent ad val.	
Nails and wire tacks, less than 45 millimeters in length, per kilogram (2.2 pounds)	.02	.0053	.10	.0268
Cement ... per kilogram (2.2 pounds)	.20	.0536	.50	.134
Cement castings and forms ... do	.50	.134	1.00	.268
Watches:				
In gold case ... each	1.00	.268	5.00	1.34
In silver case ... do	1.00	.268	2.00	.536
In other cases ... do	1.00	.268	1.00	.268

INCOME TAXATION IN FRANCE.

No proposed fiscal legislation in many years has received the attention now being given in France to the measure laid before the Chamber by M. Rouvièr, Minister of Finance. The success of the bill is by no means determined, although a ministerial measure, but its text will be none the less interesting on that account to students of political economy. One of the critics of the bill says that, properly speaking, this bill is one providing a substitute for the present tax upon windows and doors and real property by one upon rent. Complaint is made that the appraisement of taxation will be controlled by the employees of the financial administration.

These officers establish the category of the taxpayer without declaration from the latter. Thereafter the taxpayers may protest. The rate of taxation being agreed upon, the State reserves the right to review the case, readjust the rate, and collect the shortages for as many as five years. This tax is favorable to the poor and inoffensive to the rich, but strikes with all its weight the great middle classes. Such, briefly, are the grounds of opposition to what is termed a leap into the dark. The exemptions favorable to fathers of large families are particularly interesting. The full text of the bill follows.

ROBERT P. SKINNER,
Consul-General.

MARSEILLES, *June 25, 1903.*

PROJECT OF LAW.

ARTICLE 1. There shall be established, as a substitute for contributions under the head of taxation upon personal property and upon windows and doors, a general impost upon revenue.

Concerning the general imposts upon the revenue.

ART. 2. The general impost upon revenue is thus composed: (1) Of a personal tax, graduated according to the totality of the abilities of the taxpayer; (2) of a tax upon house rent.

ART. 3. The general impost upon revenue is due on the 1st of January of each year for the entire year from every person residing upon French soil, and from every person who, although residing beyond French territory, possesses therein a furnished house at his disposition, or draws revenues from real property or from agricultural, commercial, or industrial enterprises situated in France. The impost is due under the same circumstances from societies and associations of whatever nature, accordingly as they may have their headquarters in France or beyond the borders of France.

Are exempted from the impost upon revenue, save for the exceptions foreseen in article 13 herewith:

1. Persons whose taxable revenue as determined in conformity with the articles herewith does not exceed—

Five hundred francs ($96.50) in communes of 2,000 inhabitants and below.

Seven hundred francs ($135.10) in communes of 2,001 to 5,000 inhabitants.

Nine hundred francs ($173.70) in communes of 5,001 to 10,000 inhabitants.

One thousand two hundred francs ($231.60) in communes of 10,001 to 30,000 inhabitants.

One thousand six hundred francs ($308.80) in communes of 30,000 inhabitants and above.

Two thousand francs ($386) in Paris.

2. Ambassadors and other foreign diplomatic agents, officials, consuls, and consular agents, but only in the measure with which the countries that they represent concede analogous advantages to French diplomatic and consular officers.

3. Foreigners who upon the 1st of January have resided in France less than one year, but only in that which concerns revenues produced beyond French territory.

Of the personal tax.

ART. 4. Personal taxation is established by categories, in conformity with the tariffs here following. It is uniformly calculated, and according to deductions specified in the said tariff, at the rate of 1.50 per 100 of the mean revenue of each category.

Category.	Mean revenue of each category.		Undutiable proportion deducted.	Net mean of dutiable revenue.		Amount of personal tax.	
	Francs.		*Per cent.*	*Francs.*		*Francs.*	
1	750	$144.75	85	112.50	$21.71	1.75	$0.33
2	1,250	241.25	80	250.00	48.25	3.75	.72
3	1,750	337.75	80	350.00	67.55	5.25	1.01
4	2,250	434.25	75	562.50	108.56	8.50	1.64
5	2,750	530.75	50	825.00	159.22	12.50	2.41
6	3,500	675.50	65	1,225.00	236.42	18.50	3.57
7	4,500	868.50	60	1,800.00	347.40	27.00	5.21
8	5,500	1,061.50	55	2,475.00	477.67	37.00	7.14
9	7,000	1,351.00	50	3,500.00	675.50	52.50	10.13
10	9,000	1,737.00	40	5,400.00	1,042.20	81.00	15.63
11	11,000	2,123.00	30	7,700.00	1,486.00	115.50	22.29
12	13,500	2,605.50	20	10,800.00	2,084.40	162.00	31.27
13	17,500	3,377.50	10	15,750.00	3,039.75	236.25	45.59
14	22,500	4,342.50	....	22,500.00	4,342.50	337.50	65.14
15	27,500	5,207.50	....	27,500.00	5,207.50	412.50	79.61
16	35,000	6,755 00	....	35,000.00	6,755.00	525.00	101.32
17	45,000	8,685.00	....	45,000.00	8,685.00	675.00	130.27
18	55,000	10,615.00	....	55,000.00	10,615.00	825.00	159.22
19	70,000	13,510.00	....	70,000.00	13,510.00	1,050.00	202.65
20	90,000	17,370.00	....	90,000.00	17,370.00	1,350.00	260.55
21	110,000	21,230.00	....	110,000.00	21,230.00	1,650.00	308.80
22	135,000	26,055.00	....	135,000.00	26,055.00	2,025.00	390.82
23	175,000	33,775.00	....	175,000.00	33,775.00	2,625.00	506.62
24	225,000	43,425.00	....	225,000.00	43,425.00	3,375.00	651.37
25	275,000	53,075.00	....	275,000.00	53,075.00	4,125.00	796.12
26	350,000	67,550.00	....	350,000.00	67,550.00	5,250.00	1,013.25
27	450,000	86,850.00	....	450,000.00	86,850.00	6,750.00	1,302.75
28	550,000	106,150.00	....	550,000.00	106,150.00	8,250.00	1,592.25
29	700,000	135,100.00	....	700,000.00	135,100.00	10,500.00	2,026.50
30	900,000	173,700.00	....	900,000.00	173,700.00	13,500.00	2,605.50
31	1,100,000	212,300.00	....	1,100,000.00	212,300.00	16,500.00	3,184.50
32	1,350,000	260,550.00	....	1,350,000.00	260,550.00	20,250.00	3,908.25
33	1,750,000	337,750.00	....	1,750,000.00	337,750.00	26,250.00	5,066.25
34	2,250,000	434,250.00	....	2,250,000.00	434,250.00	33,750.00	6,513.75
35	2,750,000	530,075.00	....	2,750,000.00	530,750.00	41,250.00	7,961.25

ART. 5. The revenue according to which the personal tax is regulated is understood to be the ensemble of the annual revenues of every kind arising from furnished houses and buildings, from commerce and industry, from societies and trusts, from the liberal professions, from public and private situations, from pensions, and in general from all lucrative occupations, with deduction of interest upon loans charged to the taxpayers.

The taxable revenue is represented: (*a*) For improved properties, by the revenue which serves as base for the land tax; (*b*) for unimproved properties, by the rental value of the buildings or the real price of the actual rentals paid, (*c*) for capital invested, by the total of the interest, dividends, and arrears.

In that which concerns agricultural, industrial, and commercial exploitation charges and offices, the liberal professions, public and private situations, it is composed of the excedent of gross receipts realized upon the expenses inherent to the exercise of the profession.

In regard to societies, companies, and enterprises of whatever character—industrial, commercial, and civil—are considered as expenses inherent to the exercise of the profession, the interests, dividends, and all other products or benefits which they distribute between their members or stockholders.

The tax upon house rent.

ART. 6. The tax upon house rent is based upon the real rental value of the building. It is due upon each furnished house occupied or at the disposition of the taxpayer, either in the commune of actual domicile or in any other commune, under whatever title it may possess.

ART. 7. The rental value of residences serving as a base for the tax upon house rent is determined, as in the case of patents, either by the average of actual leases or of declarations of verbal arrangements, or by comparison with other buildings the rent of which has been regularly established or is notoriously known, and, in default of these bases, by appreciation.

Not comprised in the appraisement of this rental valuation are properties exclusively utilized for commerce, industry, or the exercise of the liberal professions, and buildings required for rural exploitation; likewise buildings employed for the lodging of pupils in schools and "pensions," and the offices of public functionaries.

ART. 8. Persons in furnished lodgings are not subjected to the tax upon rent, except at the rate of the rental value of their lodging, appraised as an unfurnished lodging.

ART. 9. The rate of the tax upon rent is fixed at 4 per cent of the imposable rental value.

ART. 10. In the county towns of the Departments, and in other communes which count more than 5,000 inhabitants, there is to be deducted from the rental value of residences of each taxpayer, for the application of the rate of the impost, a minimum of rent peculiar to each commune.

This minimum represents two-thirds of the figure which in each commune constitutes the average house rent of taxpayers ranged, for the application of the personal tax, in the first two categories of the tariff.

It is fixed exceptionally at 375 francs ($72.37) for the city of Paris.

ART. 11. When several persons live together in such manner as to constitute a single family, the deduction is operated but once; the rule is the same for clubs, societies, and associations of every nature.

When a taxpayer possesses several furnished houses, the deduction is effected only in the commune of real domicile, or for the principal habitation, if these habitations are situated in the same commune. No deduction is accorded in that which concerns houses within the disposition of persons residing beyond French territory.

ART. 12. In the communes other than the county towns of Departments, and of which the agglomerated population does not exceed 5,000 inhabitants, the rate of the tax upon rents is applied but for two-fifths to the taxpayers ranged for the application of the personal tax in the first two categories, but for three-fifths to the taxpayers ranged in the third and fourth categories, and for but four-fifths to taxpayers ranged in the fifth and sixth categories.

The benefit of the preceding disposition is not applicable to houses owned in France by persons residing abroad.

ART. 13. The tax upon rent is not due from persons who are liberated from the personal tax.

The exceptions in this respect are in favor of those only who, although not residing upon French territory, and enjoying only revenues produced beyond French territory, have here, nevertheless, a furnished residence at their disposition.

The assessment of the impost.

ART. 14. The general impost upon revenue is established: (1) In that which concerns the personal tax, in the communes where the taxpayer has his habitual residence, or, if he does not reside in France, in the commune whence he finds the principal source of his revenues; (2) in that which concerns the tax upon rents, in the commune where is situated each of the buildings giving cause for the application of the tax.

ART. 15. The head of a family is subject to the personal tax, both by reason of his personal revenues and by those of his wife and other members of the family living with him.

In regard to clubs, societies, and associations of every nature, the personal tax is established in block in the name of those establishments, represented by their presidents, administrators, directors, chiefs, or superiors, according to the totality of their revenues.

The same rules are applicable to the tax upon rent.

Wives whose property is separated, but who do not live with their husbands, are subject to the personal tax and to the tax upon rent.

Children or other members of the family who profit by their own labor or possess personally a revenue which is not at the disposition of the head of the family are likewise distinctly subject to the personal tax, but the buildings that they occupy with the head of the family are in every case taxable in block in the name of the latter.

ART. 16. The taxpayers having at their charge either legitimate children or legitimized children, aged less than 16 years, are, for the application of the personal tax, classed in a category inferior by one, two, or three degrees to that to which they belong by the totality of their revenues, according as the number of these children is two or three, four or five, or more than five.

The benefit of this declassification is, however, accorded integrally only to taxpayers ranged in the first ten categories; it is limited to one or two degrees for the taxpayers belonging to the ten categories, according as the number of children is three, four, five, or more than five; it is but one degree for other taxpayers, and only when they have more than five children.

In that which concerns the tax upon house rent, the sum to deduct under the head of minimum rent in communes of more than 5,000 agglomerated inhabitants, and in the county towns of the Departments, is increased one-fifth for each child above one. In the other communes the rate of taxation to apply is that of the category in which the taxpayers are ranged by the effect of the preceding paragraph.

Article 31 of the law of the 8th of August, 1890, is abrogated.

ART. 17. In order to enjoy these advantages taxpayers are required to deposit at the mayor's office of the commune where they have their habitual and principal residences a declaration stating the names and ages of their children.

ART. 18. The controller of direct taxation, assisted by the mayor and the assessors, will prepare for each commune, with the aid of the collector, a list of persons who should be subjected to the tax upon revenue.

With the aid of the information supplied by the rolls of direct taxpayers, of those who receive taxes in the commune or furnished by the various public services, will be determined the category in which each taxpayer should be ranged for the application of the personal tax. Similarly, the total of the rent value of residences which should serve as a basis for the tax upon house rent will be fixed, and the number of children will be established, of which account should be taken, in order to make the deduction of family charges.

In the communes where a deduction is made for the assessment of the tax upon rent, the imposable revenue of taxpayers whose house-rent value is superior to five times the minimum can not be established by the controller at a sum inferior—

To ten times this rental value in communes of 5,001 to 10,000 inhabitants.

To nine times this rental value in those of 10,001 to 30,000 inhabitants.

To eight times this rental value in those of 30,001 inhabitants and over.

To seven times this rental value in Paris.

Account is taken for this calculation at the place of imposition of the various habitations for which the taxpayer is subjected to the tax upon rent.

ART. 19. The controller shall communicate directly to the interested persons the results of the classification of which they have been made the object for the application of the personal tax, advising them that a delay of fifteen days is accorded in which they may formulate their observations upon the exactitude of this classification and in which they may demand a rectification.

The controller will examine the observations presented and will assure the result which such observations appear to him to require, without prejudice for the taxpayers of the right to reclaim by law after the establishment of the rolls.

The communication foreseen in the preceding paragraph is renewed every three years only, except in the case that a modification of the preceding classification has been recognized as necessary because of new declarations.

ART. 20. Every taxpayer who shall have been ranged for the application of the personal tax in the category inferior to that to which he really belongs will be expected to pay an impost equal to the sums of which the Treasury shall have been annually deprived, except that this deficiency can not be applied for more than five years prior to that during which the inexactitude of the classification has been recognized.

The right of back payments will be enforced under the same conditions in respect to taxpayers who, by reason of inexact observations, shall have obtained the application of a tariff inferior to that according to which they should be taxed, but the impost claim will be in this case carried to double the sums of which the Treasury shall have been successfully frustrated.

The obligation to pay the tax due in virtue of these two preceding paragraphs is incumbent upon those having the right of debtors, in case the recovery can not be operated upon the latter.

Concerning rolls and reclamations.

ART. 21. The rolls of the general tax upon revenue are established and published in the same manner as those of direct contributions.

Payment is obtained in conformity with articles 29 and 30 of the act of July 15, 1880, upon licenses.

Supplementary rolls may be established in regard to persons who have been omitted from the first roll, or who owe a supplementary tax under the conditions foreseen in the preceding article.

ART. 22. The dispositions relative to the presentation, construction, and judgment of reclamations in matters of direct contributions are applicable to the general tax upon revenue.

Every taxpayer who may believe himself to be overtaxed shall be allowed to establish the exactitude of his reclamations by the production of authentic documents, books of trade (regularly kept), and all other documents.

The administration on its side is authorized to establish the exactitude of the contested classification with the aid of every element of information resulting from acts, judgments, declarations, notes, and other documents which have come to the knowledge of anyone in the public service, in conformity with existing law.

ART. 23. The notification of the results, the distribution of all notices, and in a general manner the transmission of every letter of advice or communication concerning the general tax upon revenue shall be transmitted without charge by the post and under sealed envelopes.

Every person called by reason of his functions or attributions to aid in establishing or collecting the impost is held to professional secrecy within the terms of article 378 of the penal code, and is subject to the penalties prescribed in the said code.

ART. 24. Every public administration, every public establishment or establishment recognized as having public utility, every society or association employing subordinates, salesmen, workmen, aids, or auxiliaries receiving pay, salary, or compensation is held to return every year to the director of direct taxation of the Department a list of persons thus occupied, with a communication of their pay, salary, or compensation paid to each during the preceding year.

ART. 25. A public administrative regulation will determine the measures necessary for the application of the dispositions which form the subject of the preceding articles.

Special dispositions.

ART. 26. The general tax upon revenue is fixed by proportion according to the tariffs and rates established by the present law. However, for the first year of the application of this law these tariffs and rates will be subjected, before the making up of the rolls, to proportionate modifications necessary to raise or lower the product of the impost, in that which concerns the part of the State, to the sum to which shall have been fixed for the preceding year the estimate of the product of personal taxation, and taxes upon doors and windows.

ART. 27. The total of the tax upon revenue collected for the account of the State, but only to the extent of one-half, is substituted for the principal of the personal taxation, for the calculation of the proportional element of the military tax.

Concerning departmental and communal fractions.

ART. 28. The additional departmental and communal centimes are not to be carried upon personal taxation, but they are to be applied to the tax upon house rent; they are calculated, in that which concerns this tax, upon a principal equal to the triple of the impost collected for the account of the State.

ART. 29. The dispositions of article 26 of the law of August 8, 1890, are abrogated.

ART. 30. The direct contributions provided for in the legislative or administrative acts by which are authorized local impositions still in vigor apply to the tax upon improved property, unimproved property, licenses, and house rent.

The new proportions of centimes which may be imposed under the head of the contributions specified in the preceding paragraph are fixed by decrees for the departmental impositions and by prefectoral orders for the communal impositions, according to the last established product, and, if need be, according to the product foreseen by the approving act.

ART. 31. Twenty per cent of the principal of the land tax upon unimproved property is contributed by halves to the Departments and communes.

Article 1 of the law of July 21, 1897, is abrogated.

From the sums thus abandoned by the State, the Departments and communes will take in equal portions the sum necesssary to proceed to a revision of the appraisement of such properties. This revision should be completed within ten years.

ART. 32. The present law will become applicable immediately after the expiration of the year following that in which it is promulgated.

ENTERPRISES IN ONTARIO.

This being an agricultural district, there are few manufacturers in it. A Toronto syndicate recently purchased 130 acres of land in this township, on the west bank of the Niagara River, for the purpose of establishing a shipbuilding industry. They have contracted to build ten large vessels next season for the lake trade. They paid $13,000 for the land. The same amount of water front in the city of Buffalo would have cost $1,000,000. The taxes in the city of Buffalo are very high, while the tax rate here is low, and the town has voted to limit the assessed valuation of this particular plant to $20,000 for twenty years. The new company will probably buy most of the ship timber which is now hauled to the ferry with teams and sold to the Buffalo shipyards.

An American company is looking for a site for a steel plant. It seems to favor the west bank of the Niagara, near the shipyards, where it can connect with the Michigan Central Railway and obtain cheap power from the Canadian Electric Company, Niagara Falls, Ontario. The Grand Trunk Railway has shipped this year over 3,000,000 pounds of old steel rails to the Buffalo Steel Company, at Tonawanda, to be worked over into new rails. The new steel company will probably get this business.

Railway cars originally had a capacity of 8 tons; now they sometimes carry 42 tons, and require heavier rails. The International Bridge had to be built over and made stronger, in order to support the heavy trains.

The Traders' Bank of Canada, with a capital and surplus of $1,850,000, has opened a branch here to accommodate these new industries.

Dr. R. V. Pierce has a 3-story brick building here, where he manufactures his proprietary medicines for the Canadian Provinces, thereby saving the duties he would have to pay if made at his works in Buffalo. He also imports his foreign drugs cheaper into Canada than into the United States. This is especially true of glycerin, which he uses in large quantities. His shipments from this place last year amounted to $978,000. I am told he intends to make medicines here for all his trade outside of the United States.

A cereal called "Malta-Vita" and a patent medicine called "Hutch" are manufactured in branch works here for Canadian trade.

HORACE J. HARVEY,
Consul.

FORT ERIE, *June 26, 1903.*

THE OSAKA EXHIBITION.

I inclose herewith a list* of the exhibits at the Osaka Exhibition made by the State of Oregon and call attention to the fact that Oregon is the only American State which has gone to any expense in order to make an exhibit at this fair.

Colonel Dosch, the very active and efficient commissioner in charge of the Oregon exhibits, is making the most of the very small appropriation of $4,000 set aside by that State to help show up its products.

The Oregon exhibits have no State building, but are housed in the Foreign Samples Building, alongside the Canada Building, which, with its contents, is reflecting no small degree of credit upon Canada. It is said that the Dominion has expended the sum of $70,000 upon this enterprise, and its efforts to make a good show stand in marked contrast with the inactivity shown by the United States.

The Canadian commissioners are distributing a great number of pamphlets in the Japanese language, descriptive of their products, copies of which, in English, I am forwarding the Department.

One of the principal features inside the Canadian Exhibition Building is the great rush by the Japanese each day at 4 p. m. to purchase biscuits and loaves of bread baked in full view inside the building. Hundreds of these people then stand with their arms over the railing and money in their hands, ready to purchase, all clamoring loudly to be waited upon. The bread is made of hop yeast and is in much greater demand than the supply. It is expected that in future Canadian flour will be in great demand, as the bread made from it is of most excellent quality. Had some one of our Northwestern States been in evidence at the Osaka Exhibition with their hard-wheat flours, the fact could have been demonstrated that our flours are just as good and can make as much bread as the Canadian flour on exhibition.

Among the smaller countries exhibiting may be mentioned Dutch East India, the commissioners for which have issued a large pamphlet describing their exhibits and the resources of their country.

Other American exhibits than those from Oregon are found scattered promiscuously throughout the Foreign Samples Building and some are included in displays made by foreign firms in Japan; but considering the extent of our country and its immense resources, it is plainly evident that there has been a considerable lack of interest at this exhibition upon the part of American exporters.

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*List is on file in the Bureau of Statistics, where it may be seen by parties interested.

Germany has taken much interest and some small States have made very considerable exhibits.

The largest foreign exhibit is from Austria, to defray the expense of which the Government has appropriated 100,000 guilders ($40,600). The principal exhibits of this country (Austria) are machinery, printing presses, planing mills, spinning machinery, and fire engines. Altogether, it is a splendid exhibit.

England is poorly represented, but not so poorly as is the United States.

Colonel Dosch, the Oregon commissioner to the Osaka Exhibition, has organized a Japanese syndicate to take over his exhibits at the close of the exhibition, thus giving practical effect to the efforts of his State.

This syndicate is organized and incorporated with a cash capital of 300,000 yen ($150,000) to handle Oregon products and manufactures. A representative of the syndicate will join Colonel Dosch and remain with him until the close of the exhibition in order to become familiar with the merchandise to be handled in future.

SAMUEL S. LYON,
Consul.

KOBÉ, *June 1, 1903.*

Consul Lyon also transmits clippings from newspapers regarding the Osaka Exhibition, from which the following information has been taken:

At the great exhibition opened in Osaka the Germans, as usual on such occasions, are very much in evidence. All kinds of German goods, from pins and needles up to locomotives, agricultural machines, etc., are to be seen. The persistency with which the Germans, merchants and manufacturers, exhibit their wares is the very best evidence in their favor. As at Chicago in 1893 and in Paris in 1900, so now at Osaka Germany among foreign states is making a good showing.

TRANSVAAL IMPORTS.

I transmit herewith a printed statement showing the imports into the Transvaal during the quarter ended March 31, 1903, as prepared by Mr. J. Honey, director of customs at Pretoria. The imports given in the statement do not include free importations for the South African garrison institute and officers' mess, burgher relief stores, or railway material imported as public stores. The imports are given in detail, but it is thought that this trade will prove of sufficient interest to our exporters and manufacturers to warrant the publication of the table in the CONSULAR REPORTS.

The customs duties collected during the quarter amounted to $2,951,146, an increase of $1,935,596 over the duties collected during the March quarter of 1902.

WILLIAM D. GORDON,
Consular Agent.

JOHANNESBURG, *June 15, 1903.*

Statement of quantity and value of goods imported into the Transvaal for the quarter ended March 31, 1903.

Article.	Quantity.	Value.*
Acetic acid and vinegar .... gallons...	8,896	$8,536
Agricultural implements	....	212,398
Ale and beer .... gallons...	85,167	93,119
Ammunition:		
Cartridges .... number...	501,683	6,715
Cartridge cases .... do.....	97,160	1,487
Detonators	....	36,517
Gunpowder .... pounds...	568	520
Shot .... do.....	11,370	690
Percussion caps	....	24
Animals, live:		
Cattle .... number...	6,128	364,058
Horses .... do.....	2,668	309,966
Mules .... do.....	3,593	226,605
Pigs .... do.....	2,089	20,953
Poultry .... do.....	76,946	66,505
Sheep and goats .... do.....	36,499	218,385
Other kinds .... do.....	1,172	38,380
Apothecary ware:		
Chemicals and toilet articles	....	320,902
Cyanide of potassium .... pounds...	1,948,057	446,033
Quicksilver	....	3,746
Sulphuric acid .... pounds...	25,922	1,577
Acids, other kinds	....	2,024
Apparel and slops	....	1,875,068
Bags, not leather or canvas	....	98,784
Basket ware	....	4,855
Beads .... pounds...	41,283	8,451
Biscuits .... do.....	1,495,058	159,658
Books and stationery.		
Books, printed	....	93,051
Stationery	....	285,010
Bran .... pounds...	4,735,201	70,279
Boots and shoes	....	975,827
Brass and copper ware:		
Wire, not for electrical purposes .... pounds...	28,526	5,800
Rod and sheet	....	925
Brush ware	....	67,440
Butter .... pounds...	1,679,724	468,110
Butterine, margarin, and ghi .... do.....	231,702	32,377
Candles .... do.....	2,923,449	239,674
Canvas and duck	....	68,295
Cards, playing .... packs...	54,578	6,064

* Reduced to United States currency in the Bureau of Statistics, Department of Commerce and Labor.

Statement of quantity and value of goods imported into the Transvaal, etc.—Continued.

Article.	Quantity.	Value.
Cement and lime:		
Cement ... pounds	4,738,844	$35,340
Lime ... do	32,569	275
Cheese ... do	489,666	81,898
Chicory ... do	114,319	6,432
Chocolate and cocoa ... do	84,618	43,980
Cigars ... number	3,850,940	122,237
Cigarettes ... do	13,421,258	66,680
Clocks and watches		56,283
Coals ... pounds	503,682	1,135
Coke and patent fuel ... do	1,352,870	7,175
Coffee:		
Raw ... do	2,852,709	229,068
Roast and ground ... do	380,880	65,366
Confectionery and sweets ... do	664,031	120,760
Corks and bungs		11,225
Corn and grain:		
Barley ... pounds	427,692	7,904
Beans ... do	341,345	8,873
Chaff ... do	439,233	6,370
Dholl ... do	143,734	3,881
Kaffir corn ... do	2,767,831	58,368
Lucern and fodder, not oat hay ... do	7,748,446	114,090
Malt ... do	2,264,629	76,570
Mealies ... do	25,322,483	431,760
Oat hay ... do	16,311,291	281,971
Oats ... do	7,186,218	116,650
Pease ... do	38,113	1,350
Rye ... do	43,003	1,022
Wheat ... do	1,272,990	18,608
Cotton manufactures		534,925
Cutlery		81,750
Dynamite ... pounds	120,322	22,400
Earthenware and crockery		134,090
Eggs ... dozens	372,952	150,108
Electric fittings		49,355
Fish:		
Fresh ... pounds	452,552	32,945
Preserved and dried ... do	1,762,125	214,820
Flour:		
Wheaten ... do	33,636,728	721,188
Other kinds ... do	100,007	9,450
Fruit:		
Dried ... do	681,274	66,836
Fresh ... do	5,978,476	147,410
Preserved ... do	358,935	36,990
Furniture and cabinet ware:		
Carpets		188,700
Other kinds		987,375
Fuse		37,508
Glass.		
Bottles ... dozens	159,777	67,685
Window		17,410
Other kinds		93,414
Glue ... pounds	45,756	4,227
Grease, antifriction ... do	594,056	17,724
Groceries and oilman's stores		382,645
Guns (barrels) ... number	1,056	23,128
Haberdashery and millinery		2,101,341
Hardware		1,170,958
Hats and caps		167,235

Statement of quantity and value of goods imported into the Transvaal, etc.—Continued.

Article.	Quantity.	Value.
Honey ... pounds	14,860	$2,250
Hops ... do	97,531	28,207
Instruments:		
Musical		52,672
Other kinds		23,453
Iron and steel:		
Chains		252
Fencing wire and poles		104,904
Galvanized and corrugated		728,965
Pipes		80,277
Rod, block, and hoop		243,320
Sheet		13,373
Jams and preserves ... pounds	1,057,342	102,205
Jewelry		160,427
Kaffir picks and hoes ... number	41,568	6,833
Lead:		
Bar and sheet ... pounds	11,172	896
Pipes ... do	1,900	471
Other kinds ... do	16,404	1,967
Leather:		
Saddlery		127,518
Manufactured		182,064
Unmanufactured		24,086
Linen manufacture		82,020
Machinery:		
Agricultural		45,815
Electrical		182,172
Manufacturing		235,457
Mining		2,180,254
Other kinds		237,785
Matches ... gross	67,997	27,138
Meal:		
Wheaten ... pounds	1,259,830	36,700
Other kinds ... do	2,213,221	85,370
Meats:		
Preserved ... do	9,575,173	1,218,544
Salted, smoked, and dried ... do	22,682	4,621
Fresh and game ... do	11,739,378	947,653
Milk, preserved ... do	5,698,936	498,675
Mineral waters ... dozens	31,550	28,080
Oils:		
Castor ... gallons	5,757	10,570
Cocoanut ... do	3,629	4,110
Lard ... do	5,773	5,141
Lamp—		
Mineral ... do	369,880	70,118
Other kinds ... do	1,886	2,590
Linseed ... do	49,641	31,898
Machine ... do	198,335	45,601
Sweet ... do	12,459	16,889
Other kinds ... do	21,868	11,960
Paints		93,435
Paper:		
Printing		41,832
Wall		61,469
Other kinds		50,801
Photographic material		45,020
Pianos ... number	549	84,457
Pickles, sauces, and chutney ... pounds	300,970	56,198
Plated ware		38,292
Resin		278

Statement of quantity and value of goods imported into the Transvaal, etc.—Continued.

Article.	Quantity.	Value.
Revolvers and pistols ...number	342	$4,062
Rice ...pounds	1,875,421	56,716
Rope:		
Wire		20,003
Other kinds		29,390
Salt:		
Table ...pounds	158,746	5,205
Rock and other kinds ...do	3,207,238	22,889
Seeds, trees, and plants		244,346
Sheep dip ...gallons	28,494	5,279
Snuff ...pounds	1,083	1,448
Soap:		
Household ...do	2,952,163	152,879
Perfumed and toilet ...do	91,595	33,510
Sparklets and bottles		29,093
Spirits:		
Liqueurs and bitters ...gallons	6,348	32,310
Perfumed and scented ...do	2,752	33,934
Oversea ...do	177,488	485,164
South African ...do	5,013	8,225
Stoneware:		
Grinding		894
Marble		4,637
Tombstones		3,027
Other kinds		5,122
Sugar ...pounds	11,831,900	338,537
Tallow ...do	15,550	842
Tar:		
Coal ...gallons	27,831	4,796
Pitch		331
Other kinds ...gallons	99,996	3,800
Tea ...pounds	513,081	124,486
Tin and zinc:		
Rod and block		12,266
Other kinds		3,635
Tobacco:		
Manufactured ...pounds	114,575	60,652
Unmanufactured ...do	409,440	49,324
Tobacconist's ware		54,417
Tramway material		122,061
Toys and sporting goods		85,113
Turpentine ...gallons	18,235	14,361
Uniforms ...number	7,375	5,642
Varnish ...gallons	20,771	20,955
Vegetables:		
Fresh—		
Onions ...pounds	1,144,807	23,848
Potatoes ...do	1,790,055	44,954
Other kinds ...do	357,633	9,418
Preserved ...do	1,227,676	96,742
Vehicles:		
Carts and carriages		320,760
Wagons and parts		119,115
Bicycles and accessories		367,523
Wheelbarrows and other kinds		25,518
Wines:		
Oversea ...gallons	58,534	150,120
South African ...do	12,869	16,080
Sparkling and champagne ...do	10,165	102,196
Wire:		
Electric cable and wire and wire rope		25,173
Other kinds		1,297

Statement of quantity and value of goods imported into the Transvaal, etc.—Continued.

Article.	Quantity.	Value.
Wood:		
Manufactured		$328,725
Unmanufactured		1,311,835
Woolen manufacture		377,556
Works of art:		
Pictures		30,836
Statuary		2,381
All other articles		42,820
Total		30,116,957

EXPORTS FROM THE UNITED STATES TO SOUTH AFRICA DURING 1902.

[Compiled in the Bureau of Statistics, Department of Commerce and Labor.]

Article.	Quantity.	Value.
Animals:		
Horses ... number	60,469	$6,106,810
Mules ... do	23,282	2,272,101
Sheep ... do	84	12,000
Agricultural implements:		
Mowers and reapers and parts of		37,728
Plows and cultivators and parts of		185,590
All other, and parts of		59,506
Books, maps, engravings, etchings, and other printed matter		109,559
Breadstuffs:		
Corn ... bushels	49,131	34,840
Corn meal ... pounds	33,188	93,558
Oats ... bushels	3,099,563	1,430,157
Wheat ... do	1,442,649	1,062,389
Wheat flour ... pounds	445,606	1,585,826
All other		466,741
Candles ... pounds	216,120	17,286
Cars, carriages, and other vehicles, and parts of		360,271
Chemicals, drugs, dyes, and medicines		386,971
Cotton, manufactures of:		
Cloths ... yards	6,105,420	328,108
All other		93,683
Fibers (vegetable) and textile grasses, manufactures of		69,556
Fish:		
Salmon, canned ... pounds	2,581,088	219,233
All other		95,792
Fruits and nuts		314,987
Gunpowder and other explosives		13,442
Hay ... tons	37,532	705,143
Instruments and apparatus for scientific purposes, including telegraph, telephone, and other electric appliances		155,946
Iron and steel and manufactures of:		
Wire ... pounds	23,924,675	558,571
Builder's hardware, saws, and tools		337,242
Machinery		1,298,250
All other		1,002,853
Leather and manufactures of		414,898
Musical instruments		41,804
Naval stores (turpentine, spirits of) ... gallons	91,632	49,133
Oils:		
Animal (lard) ... do	131,667	105,215
Mineral (refined or manufactured) ... do	9,766,549	1,134,494

Exports from the United States to South Africa during 1902—Continued.

Article.	Quantity.	Value.
Paints, pigments, and colors		$38,324
Paraffin and paraffin wax ... pounds	2,057,657	113,408
Provisions, comprising meat and dairy products:		
Beef, canned ... do	9,152,068	922,244
Lard ... do	3,281,760	329,673
All other		1,003,710
Spirits, distilled (rum) ... proof gallons	960,157	1,316,110
Sugar, refined ... pounds	152,918	6,175
Tobacco and manufactures of:		
Leaf ... do	4,308,375	409,375
Cigarettes		289,850
All other		601,588
Wood and manufactures of:		
Lumber—		
Boards, deals, and planks ... feet	30,807,000	632,513
All other		181,063
Manufactures of—		
Doors, sash, and blinds		174,806
Furniture, not elsewhere specified		364,361
All other		158,304
All other articles		1,058,678
Total domestic exports		28,759,878
Total foreign exports		20,227
Total exports of merchandise		28,780,105

SIBERIAN TRADE NOTES.

Russian manufactures.—Russian goods are beginning to compete with English goods in the Asiatic markets with some success, especially in Korea and in the vicinity of the Chinese boundary. The pioneer in this line is a Moscow manufacturer, N. I. Konshin, who has already a number of representatives in China and Korea.

Butter trade.—It is proposed to send to Manchuria during 1903 about 300,000 poods (10,833,600 pounds) of butter. As most of this (7,222,400 pounds) will be shipped during the summer months, the Trans-Baikal line is making preparations for the necessary refrigerating cars and boxes and cold storage.

Russian trade with the Far East.—The decline of the Russian Far Eastern trade is shown by the statistics of the goods transported from European Russia to the ports of the Pacific. According to an official report the goods so transported in 1900 amounted to 51,157,000 rubles ($26,345,853), while in 1901 and 1902 they amounted to 49,827,000 rubles and 37,704,000 rubles ($25,660,905 and $19,417,560), respectively.

Railway and steamship time-table.—According to the changes announced in the time-table of Siberian trains the express steamers of the Chinese Eastern Railroad will leave Dalny from April 30 / May 13 for Nagasaki and Shanghai on Wednesdays and will arrive at

Dalny on Tuesdays. The express trains of the Chinese Eastern Railroad will leave Dalny from April 15/28 on Tuesdays and Saturdays and will arrive at Dalny on Wednesdays and Saturdays.

The fast steamer *Mongolia* recently brought from Shanghai to Dalny 21 cabin passengers, nearly all of them foreigners going across Manchuria, 10 of whom went by the express train. This express train does not, however, make exceptional time, arriving at the station Manchuria only four hours ahead of the ordinary train for passengers and goods.

Eastern railroad-building expenses.—During the years 1899–1901 the Russian Imperial Treasury paid out 222,174,700 rubles ($114,419,970) for the building of the Chinese Eastern Railroad. Up to January 1, 1902, obligations were deposited for further exploitation to the amount of 257,000,000 rubles ($132,355,000).

R. T. GREENER,
VLADIVOSTOCK, *May 12, 1903.* *Commercial Agent.*

SETTLEMENT OF GLASSWORKERS' STRIKE.

After nearly two months of idleness, the strike of cut-glass workers, reported April 24,* has been terminated by a compromise which yields to the workers a wage advance of about 10 per cent or an equivalent, in certain instances, by the abolishment of charges affecting the use and rental of machines. This will result in a wage, for a full day's work, of about 75 cents for skilled male and 55 cents for skilled female labor. Many manufacturers originally made terms with their workmen and were not affected, and the strike did not spread beyond the 1,600 finishers who first went out. The important phase of the settlement to the market is the decision announced by the manufacturers themselves to form in this branch of the trade—chiefly prisms and rings—what can best be described as a selling pool. This scheme to maintain prices, already in operation in some other trade branches, was tried once before, but failed through lack of organization. Now a selling warehouse is to be established through which all goods in this branch of the trade will be marketed at agreed and uniform prices. It is hoped by this means not only to maintain profitable prices, but to make possible a more liberal treatment of workmen and avoid further trouble. The plan has official sanction, and a public loan at low interest is promised to aid in securing proper quarters. The influence of local and Government officials was powerfully exerted to effect the compromise.

S. C. MCFARLAND,
REICHENBERG, *June 15, 1903.* *Consul.*

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* See ADVANCE SHEETS No. 1663 (June 4, 1903).

COAL TRADE AT GIBRALTAR.

A Spanish paper published in Cadiz calls attention to the fact that there has been a decrease of 23 per cent in the coal trade at Gibraltar for the years 1901 and 1902.

In 1901 the shipments were 218,782 tons, as against 167,140 tons in 1902, a decrease of 51,642 tons. This decrease, the paper says, is not to be attributed to the coal strikes of April and May, which paralyzed the maritime activity of the British colonies. In fact, if the 51,642 tons sold in 1902 be added to the 35,500 tons which represents the loss caused by the strikes, there still remains 16,000 tons to be accounted for, which shows that there are other reasons for the decrease in trade noticeable since 1890.

The following statistics may be of interest: In 1889, vessels coaled at Gibraltar to the extent of 562,000 tons; in 1890, 450,000 tons; in 1901, 401,000 tons. In 1900 this figure fell to 303,000 tons; in 1901 to 219,000 tons; and in 1902 to 167,000 tons. From these figures it results that the port has lost during the period 1889–1902 nearly 400,000 tons—that is, 70 per cent.

The difficulties and special conditions which the port of Gibraltar offers to vessels coaling should be added.

The authorities do not permit operations except in the daytime and vessels must place themselves alongside of coal hulks, which often causes damage and reclamations. For these and other reasons few vessels call at Gibraltar. The city is losing daily in commercial importance. This can only be regained by the loss of the rock's essentially military and strategic character.

R. M. BARTLEMAN,
Consul.

CADIZ, *July 1, 1903.*

MINT MACHINERY FOR KING MENELIK.

Machinery to the amount of 490 tons was transshipped from this place to Djibouti, on the French East African coast, last week, and of a character that is likely to prove a surprise to many. This lot of machinery was for a mint which King Menelik of Abyssinia is preparing to have set up and in full operation at his capital—Addis Ababa—by the first of the coming year. The mint outfit was sold by the Vienna branch of the Vulcan Machine Building Company, of Stettin, Germany, and a competent mechanic accompanied the machinery to put it in working order. On arrival at Djibouti, the machinery will be transported to the interior by rail to New Harrar, about 150 miles, the end of the road. Thence it will be transported by caravan to the capital, the caravan journey occupying more than a month. For several years, King Menelik has had a limited silver coinage circulating in his Kingdom, the minting being done in France. For some time the King has been putting aside bullion for coinage purposes, and now it is understood that he has over 50,000 kilograms (110,230 pounds) of gold bullion on hand, besides a larger amount of silver.

WM. W. MASTERSON,
Consul.

ADEN, *June 20, 1903.*

INDUSTRIAL NOTES FROM GREECE.

The Greek press announces that by the terms of a contract recently closed by the Greek consul at Naples with Italian coral fishers the latter are to come to Greece and search Grecian waters for coral. The Greek ministry has appropriated money for the purpose and has directed the consul at Naples to pay the Italian fishermen an advance installment and send them to Greece at once.

Through the Greek press I learn that Mr. D. Kyriakos, manager of the Hellenic Steamship Company, has submitted to the Greek Minister of the Interior a plan to inaugurate a direct line of steamships between Piræus and the island of Cyprus, touching en route at Syra and the island of Rhodes; that the company foresees that the line will not, in the beginning at least, pay expenses and asks assistance from the Government; and that the Minister of the Interior is in favor of granting the aid asked.

The firm of Hadzikyriakou, Zachariou & Co. announces that it has opened a cement factory at Eleusis, Greece (on the Bay of Salamis and about 15 miles from Athens), in which it is manufacturing "artificial Portland cement" equal in quality to the best made in Europe, which it offers for sale in Athens and Piræus at the following prices: In barrels: 150 drachmas paper ($12.15) per ton; by the oke, 19 leptas (1.54 cents per 2.8518 pounds); in bags: 140 drachmas ($11.34) per ton; by the oke, 18 leptas (1.46 cents).

DANIEL E. MCGINLEY,
Consul.

ATHENS, *June 13, 1903.*

THE ANGLO-BELGIAN TELEPHONE.

The new telephone line between Belgium and London* was opened to the public June 7. The exact length of the finished line, which connects St. Margaret's Bay, England, with La Panne, Belgium, is 87,000 meters (54.058 miles) and the cost of laying was 750,000 francs ($144,750). By this service, Antwerp and Charleroi will be connected with 12 English cities and towns, Brussels with 16, and Ghent, Malines, and Termonde with 11. Liege, Verviers, Bruges, and Ostend will have communication only through Brussels. Localities in the United Kingdom to be shortly included in the service are Birmingham, Brighton, Bristol, Cambridge, Cardiff, Derby, Ipswich, Sheffield, Southampton, Leicester, Lowestoft, Newport, Norwich, Nottingham, and Yarmouth.

The cable is of British make and is composed of four wires, permitting the establishment of two distinct circuits. The thickness of the cable is 5¼ inches and the wires are insulated by three coats of chemical composition and by gutta-percha, and are wound on a cable made of tarred flax. The whole is covered by two layers of specially prepared cotton, separated by a copper band. On top of this, again, a layer of flax acts as a protector, and finally the whole is inclosed in galvanized-iron wires, prepared in a special way and incased in two layers of flax tightly wound in opposite directions.

The tariff for using the telephone is 10 francs ($1.93) for three minutes' conversation.

GEO. W. ROOSEVELT,
Consul.

BRUSSELS, *June 10, 1903.*

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*See ADVANCE SHEETS No. 1465 (October 10, 1902).

NOTES.

Wheat Crop of India.—A final general memorandum on the wheat crop of India of the season 1902–3, issued on June 2, 1903, by the government of India and transmitted by Consul William Thomas Fee, of Bombay, estimates the total output at something over 7,800,000 tons (291,120,000 bushels), against 6,063,000 tons (226,352,000 bushels) in 1901–2. The estimates for 1902–3, however, include 587,000 tons (21,915,000 bushels) grown in the United Provinces in combination with barley and gram.

The exports of wheat from India during the last five years are given in the estimate as follows:

Year.	Quantity.	
	Tons.	*Bushels.*
1898 99	976,025	36,438,267
1899–1900	485,204	18,114,283
1900 1901	2,501	93,371
1901–2	366,091	13,667,397
1902–3	514,607	19,212,155

The yield of wheat per acre in the different provinces is given as follows:

Province.	Quantity.	
	Pounds.	*Bushels.*
United Provinces	961	16
Bengal	776	12.9
Punjab	753	12.5
Mysore	232	3.87
Hyderabad	190	3.17
Berar	180	3

The memorandum states that the yield for the United Provinces was the highest ever returned and that the season was a favorable one for all the provinces. At the date of the issuance of the memorandum prices of wheat were lower everywhere in India than during any previous year since 1899.

German Prison Fare.—The present food fare for prisoners in Germany is said not to meet the minimum requirements of a rational nutrition. In course of time observation has shown such severe objections to the condition of prisoners that a change appears necessary. In order to obtain a scientific and economical basis for a suitable reform a commission has been appointed, at the instance of the well-known expert in prison matters, Chief Privy Councilor Dr. Krohne, for the purpose of consulting with reference to a more rational system of feeding prisoners. Among the commissioners is the celebrated chemist Koenig, the author of the well-known tables of food articles. The report of this commission will be submitted to the several federal governments.—*Richard Guenther, Consul-General, Frankfort, July 1, 1903.*

New South Wales Registration Law.—Consul F. W. Goding sends word, under date of June 13, 1903, from Newcastle, New South Wales, to the effect that an act has passed the New South Wales legislature requiring all parties doing business in that State to register. The letter of the law contains, besides numerous provisions, explanations as to the meaning to be assigned to the words "business," "firm," "firm name," etc. A copy of the act is on file in the Bureau of Statistics, Department of Commerce and Labor, where it may be seen by interested parties.

Australian Preferential Trade with Great Britain.—The following statement was made yesterday by the Right Hon. Sir Edmund Barton, Prime Minister of the Commonwealth of Australia, with regard to the question of preferential trade with Great Britain:

> It is difficult to comment at this stage, from the Australian point of view, upon the speeches lately made in the House of Commons by the Prime Minister and Mr. Chamberlain on the question of preferential trade and the future fiscal policy of the United Kingdom. The cables tell us enough to dispel the illusion to which many here have been clinging—that there was a difference of opinion between Mr. Balfour and the Secretary of State for the Colonies. It may be too much to expect details at present, but we shall look anxiously for full reports of any speeches on the general character of the contemplated changes. Until so much is known we, in Australia, are confined to general expressions of opinion on the subject. It is, in my view, certain that unless the United Kingdom arms herself with powers to meet by retaliation fiscal attacks by foreigners on the colonies or herself, and is prepared to exercise such powers, closer fiscal relations within the Empire by way of tariff preference will be difficult, if not impossible. This method of establishing such relations has been characterized as artificial and unnatural, but if the Empire is to be viewed as a whole it is hard to discover the meaning or the justice of such epithets. I am most strongly in favor of the making of arrangements by which trade between various parts of the Empire and the mother country may be distinctly favored and developed, subject to the continued freedom of each self-governing part with regard to its own fiscal policy. Under such conditions preferential arrangements are not only more practical, but a great deal easier to bring about, and their accomplishment would be of enormous advantage to the whole Empire.

—*John P. Bray, Consul-General, Melbourne, June 3, 1903.*

Injurious Effect of German Meat-Inspection Law.—Vice-Consul-General Murphy sends the following translation from the Frankfurter Zeitung of June 22, 1903:

Pork prices are now 20 per cent less than a year ago, and it is possible that as the summer advances there will be a further fall. How is it possible that in spite of the complete closing of the frontiers, in spite of the meat-inspection law, which renders importation difficult, prices have not risen? If the frontiers were opened to-day for the admission of foreign pork, the Agrarians would cry out that this importation was the cause of the low prices; but now we have the proof that this is not so. The abnormally high prices of the past two years have lessened the consumption, and some time will be required to again increase the consumption of pork by means of temptingly cheap prices. Through the chicanery of the provisions of the meat-inspection law, through the chicanery of the measures enforced against foreign meat on our German imperial frontiers (resorted to under the pretense of sanitary protection), other countries have been led to adopt similar measures against German products. Thus, for instance, after July 1 German meat products, be they Westphalian hams, Thuringian sausage, or Frankfort wuerstchen, will no longer be admitted into the United States, or only after undergoing the same troublesome and expensive inspection as that now enforced in Germany. The great sausage factories in Westphalia, which for twenty-five years have been exporting hundreds of thousands of sausages to the United States, are exposed to ruin, and the exportation of canned Frankfort sausages is likewise seriously threatened. Thus is closed a safety valve which was always before open whenever German pork prices fell to a low level. At such times much more than usual was formerly manufactured for foreign markets. Now this resource is lost, and the same people who thought that they were playing their greatest trump in the enactment of the meat-inspection law, believing that it would hinder importation from abroad and thus keep the price of hogs at a high level in Germany, now find themselves deprived of the anticipated fruit of their policy.

Decline in Germany's Meat Imports.—During the months of April and May of the years 1903 and 1902, the imports of meat and meat products into Germany were as follows (sausages and canned meat came under the inhibitory regulations on October 1, 1902), the amounts being given in metric tons of 2,204.6 pounds:

Article.	1903.	1902.	Decrease.
	Tons.	*Tons.*	*Tons.*
Fresh beef	1,192	2,151	959
Pickled pork	474	1,365	891
Fresh pork	936	1,989	1,053
Hams and bacon	854	2,876	2,022
Lard and other fats for seasoning	10,109	17,142	7,033
Total	13,565	25,523	11,958

The butchers, in their annual national convention lately held at Potsdam, adopted a resolution to petition the Government to ameliorate the order against allowing live stock to come in from foreign countries and to reduce the customs duties on imported cattle and hogs.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, July 5, 1903.*

German Association of Inventors.—The Central Association of Inventors "Germania," of Bayreuth, will hold a general exhibition at Nuremberg during September and October of this year for the purpose of facilitating the sale of patents and copyrighted patterns. There are more than 200,000 copyrighted patterns in Germany and over 140,000 patents; one-half of these, however, are not in public use, for the reason that the inventors were not able to exploit their inventions. On account of this, the Central Association was formed a few years ago. Its purpose is to assist the members to make their inventions profitable to themselves, as it is a well-known fact that a majority of inventors have not the means to do so. The association furnishes space to inventors without means free of cost and charges no fees for effecting a sale.—*Richard Guenther, Consul-General, Frankfort, July 7, 1903.*

Admission to the German Marine Engineer Corps.—The rule has been established that candidates for service in the marine engineer corps of Germany must bind themselves to serve two years in the imperial marine, in addition to the first year of service, during which they receive their instructions. Candidates who prove unsuitable during their first year will be assigned to the second wharf division and will have to serve only as one-year machinist volunteers.—*Richard Guenther, Consul-General, Frankfort, July 1, 1903.*

Freight Discrimination on German Railways.—At a meeting of the board of directors of the Prussian State railroads, held on June 27, 1903, it was unanimously decided that from the 1st of July, 1903, a favorable freight rate—*i. e.*, a 40 per cent reduction in the present rate—be made upon mine timber which is to be shipped from certain parts of upper Silesia to foreign countries, via the German seaports located on the North and Baltic seas. The places from which shipments may be made upon such favorable terms are those located in the storm-bound districts of upper Silesia.—*Brainard H. Warner, jr., Consul, Leipzig, July 15, 1903.*

Damages for Injuries in Railroad Accident in Germany.—The royal court at Frankfort has awarded a life annuity of 17,000 marks ($4,048) to Mr. Weissgerber, M. D., of Lauterbach, for injuries received in a railway accident. On June 21, 1897, the last two cars of a passenger train were derailed between Giessen and Fulda. Dr. Weissgerber was so severely injured that he had to quit his practice. The Royal Prussian Railway management acknowledged its liability, but not to the exent of damages asked. Dr. Weissgerber brought suit, with the result that the court awarded him the said annuity on the ground that the plaintiff had a large practice and was widely known as an operating surgeon.—*Richard Guenther, Consul-General, Frankfort, July 3, 1903.*

Primary Agricultural Schools in Saxony.—There are twelve primary agricultural schools in Saxony located in the following cities: Annaberg, Chemnitz, Rochlitz, Bautzen, Auerbach, Meissen, Wurzen, Freiburg, Pegau, and Dresden. There is one horticultural school in Dresden and one in Bautzen. Candidates for admission to these schools must be at least 14 years of age, and no one will be considered who has not completed the prescribed course at some ordinary public school. The subjects taught in the primary agricultural school at Meissen are as follows: German, arithmetic, surveying, general agriculture, bookkeeping, writing, geometry, natural history, fruit raising, political economy, history, drawing, agricultural history, and stock raising.—*Ernest L. Harris, Commercial Agent, Eibenstock, July 13, 1903.*

Cheap Electric Light for Berlin.—An article in the Frankfurter Zeitung of this morning states that, commencing on January 1, 1904, the price of electric light in Berlin will be reduced 27 per cent—from 55 pfennigs to 40 pfennigs (13.1 cents to 9.5 cents) per kilowatt hour—and that the price for electric light in Berlin will then be cheaper than in any other large city. This reduction was made to compete with gaslight.—*Richard Guenther, Consul-General, Frankfort, July 7, 1903.*

Selium, an Alleged New Metal.—German papers report the discovery by Mr. Edward Mollard, a Frenchman, of a new metal called "selium." According to the English Mechanic, the discoverer claims that selium costs but one-twelfth as much as aluminum and is lighter and stronger. It does not rust, and is therefore suitable for use in shipbuilding, for the manufacture of pipes, and for railroad construction. On account of its cheapness—and as it is capable of a fine polish, resembling nickel—it would be desirable for manufacturing cooking utensils. Its density is 2.6 and its hardness not quite that of iron, but greater than lead or zinc. Its power of resistance is said to be greater than that of iron, but less than that of steel. The melting point is at 1,600° C. In melting, it contracts somewhat, but molding in forms is not impossible. It will be well, however, to await more definite information concerning its properties.—*Richard Guenther, Consul-General, Frankfort, July 14, 1903.*

Cuban Tariff Rulings.—Under date of July 4, 1903, Consul-General Frank Steinhart, of Habana, transmits the published rulings of the chief of the customs service of Cuba pertaining to the Cuban customs tariff. The rulings cover from March 31, 1900, to April 14, 1902. Copies of the rulings are on file in the Bureau of Statistics, Department of Commerce and Labor, where they may be consulted by interested persons.

Australian Tariff Decisions.—The following notices appear in the Government Gazette of the Commonwealth of Australia with regard to duties on certain articles imported into that country:

> Crystal silver fat is to be charged with duty similar to that on cocoa butter, as the latter can be used as a substitute for the former.
>
> As tucked muslin can be used as a substitute for tucked lawns, it is officially notified by the minister of customs that tucked muslin shall be charged with duty at the same rate.

—*John P. Bray, Consul-General, Melbourne, June 13, 1903.*

South African Customs Union Tariff of 1903.[*]—I inclose printed copy of the South African customs union tariff of 1903, which passed the house of parliament in this city on the 29th of June, after a very protracted discussion. The vote of the house of commons was a tie on this question, decided by the speaker in favor of the bill. The parliament was opened on June 5, and this bill was prepared and recommended by the governor. The custom prevails here of putting bills which refer to the revenue of the country into effect immediately on their recommendation by the governor; consequently, when the governor read his message at the opening of the parliament, all goods were liable to this tariff, including some which had been in the bonded warehouse for six weeks. This tariff lowers a few of the necessities of life and increases others.—*W. R. Bigham, Consul-General, Cape Town, July 31, 1903.*

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[*] Tariff on file in the Bureau of Statistics, Department of Commerce and Labor. Information relative to the duty on any special article will be given on application.

Reduction of Duty on Candles in Honduras.—Consul William E. Alger, of Puerto Cortes, reports, under date of June 25, 1903, that by a decree of May 30 customs duties on candles have been reduced as follows, per kilogram (2.2046 pounds):

Description.	Old tariff.		New tariff.	
	Honduras currency.	United States currency.	Honduras currency.	United States currency.
	Cents.	*Cents.*	*Cents.*	*Cents.*
Stearin	30	10.56	10	3.52
Wax	60	21.12	20	7.04
Tallow	20	7.04	6	2.11

Free Importations into Yucatan.—The Mexican Congress has passed an act extending the time for the free importation of such articles as were enumerated in the original decree of June 7, 1902,* into the newly created territory of Quintana Roo, Peninsula of Yucatan, for the term of one year from July 1, 1903, provided the articles mentioned are intended for consumption in that territory only.—*W. W. Canada, Consul, Veracruz, July 14, 1903.*

Change in Tariffs of Costa Rica.—By a decree which appears to-day in the Gaceta Oficial a slight change is made in the tariffs of Costa Rica. The maximum strength of alcohol permitted in wines is increased to 25 per cent—that is, all wines and juices which contain over 25 per cent of alcohol are considered, for assessment purposes, as brandies. Under the old law, all wines and juices which contained over 20 per cent alcohol were considered brandies. The change takes effect to-day.—*C. S. Caldwell, Vice-Consul, San José, July 11, 1903.*

Imports at Corunna.—Consul Julio Harmony, under date of July 3, 1903, transmits a statement showing the imports at Corunna during the calendar year 1902 and the share of the United States therein. The imports in which the United States has no share are cement, cheese, coal, cocoa, coffee, drugs, fecula, salt codfish, raw hides, marble, metals, paper, porcelain and glass ware, cod roe, starch, building stone, textiles, tin plate, and tobacco. These articles are valued at $865,788, out of a total import of $1,141,258, leaving an import of $275,470 wherein the products of the United States figure to the following extent:

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* For the original decree containing a list of articles admitted into the district named, see ADVANCE SHEETS No. 1396 (July 19, 1902) or CONSULAR REPORTS No. 264 (September, 1902), page 118.

Article.	From all countries.		From the United States.	
	Quantity.	Value.	Quantity.	Value.
Corn........tons...	231	$5,170	84	$1,848
Cotton........do......	460	76,394	460	76,394
Hardware........do......	680	45,091	29	1,926
Machinery........do......	215	38,685	8	1,140
Oil........gallons...	28,544	12,441	3,779	1,662
Petroleum........do......	1,215,205	31,580	1,215,205	31,580
Timber........tons...	6,160	66,209	3,314	35,625
Total........	....	275,570	....	150,175

Coal-Mine Concessions in Manchuria.—Engineer Yugovitch, chief engineer in the construction of the Chinese Eastern Railway, has just completed an agreement with the Chinese governor of the Hylomtsian Province, in Manchuria, for the exploitation of two coal mines in that province. This agreement, and one previously entered into with reference to coal mines in the Girin Province, was confirmed by the Imperial Chinese Minister for Foreign Affairs. By virtue of this convention the Chinese Eastern Railway is granted the right to exploit freely the coal mines on a strip of land 30 Chinese versts (about 20 miles) on both sides of the railway line, besides preferential rights to exploit coal mines beyond these limits. The most important item is to the effect that if any foreign company or companies should apply to the Chinese Government for permission to exploit any coal mines outside of the 30-verst concession, such permission shall only be granted with the consent of the Chinese Eastern Railway Company. The railway company, in accordance with this convention, agrees to indemnify all private parties whose lands may be taken for any damage done to buildings, graves, or crops, and to pay to the Chinese Government a royalty for every 1,000 Chinese pounds of the output of coal. To the company is also conceded the right to cut timber in the province, both in Government and private forests, for a remuneration to be hereafter fixed.—*R. T. Greener, Commercial Agent, Vladivostock, May 20, 1903.*

Rolling Stock of Russian Railways.—Consul-General Richard Guenther writes from Frankfort, June 24, 1903, as follows:

The St. Petersburg Gazette states that the number of passenger cars of all the public railways of Russia (Finland excepted) on January 1, 1903, was 15,545, valued at 98,461,858 rubles ($50,707,858), of which the Government railways of European Russia owned 9,733; the private trunk lines, 3,858; the Asiatic Government lines, 1,541; and the private local railways, 413. The total number of mail cars was 521 and of baggage cars 1,582, with a carrying capacity of 961,143 poods (17,311 tons). The total number of freight cars of the whole Russian system was 315,046, with a total carrying capacity of 232,586,669 poods (4,190,751 tons). The total value of these is estimated at 404,024,566 rubles ($208,072,655).

Russian Forests.—A St. Petersburg journal calls attention to the steady deforesting of Russia. The wealth of forests in European Russia has recently decreased materially. While in Sweden the forests amount to 48.6 per cent of the total area of the country, the area of forests in the 50 government districts of Russia is only 36.7 per cent and in Poland only 21.3 per cent of the total area. The importance of extensive forest renovations therefore seems evident. The forest resources of European Russia are not only less than those of Sweden, but are even less than those of Austria-Hungary and of the United States. A less reckless deforesting has become absolutely imperative. In Government circles this view has obtained for a number of years.—*Richard Guenther, Consul-General, Frankfort, July 1, 1903.*

Russian Commercial Expedition in Mongolia.—A Russian scientific and commercial expedition is now in Mongolia for the purpose of promoting the commerce of Russia therein. It is proposed to report on the feasibility of constructing a wagon road from Kansk across Mongolia. The head of the expedition is M. Popoff, who has under his charge 20 men, 50 pack horses, a detail of Cossacks, and a military topographer. An eminent naturalist, M. Voronoff, accompanies the same as the representative of the Imperial Geographical Society. One of the largest commercial firms in Russia was permitted to accompany the expedition with samples of goods to ascertain the requirements of the Mongolian market, with a view of meeting its demands in the future.—*W. R. Holloway, Consul-General, St. Petersburg, July 15, 1903.*

Siberian Asbestos.—A prominent Moscow firm, N. & P. A. Korzenetzof, has been granted permission by the Irkutsk department of mining to work asbestos mines not far from the Kutai, an affluent of the Angara. The asbestos layers are found 7 feet from the surface. There are some asbestos mines in the Urals, in European Russia, but the larger part of the asbestos used for insulators in Russia is imported Judging from the samples, the Siberian asbestos excels even the Alpian, and is in no way inferior to the Canadian product.—*R. T. Greener, Commercial Agent, Vladivostock, May 10, 1903.*

Furs and Fur-Bearing Animals in Siberia.—The fur trade in this province is in a critical condition. Prices have fallen very much and first-class furs are hard to get. Buyers complain that through the action of some English traders a few years ago in paying extravagant prices to the natives for furs—furs ultimately sold by the buyers at a loss—the regular prices were greatly inflated. Hunters complain that fur-bearing animals are constantly growing scarcer in Siberia.—*R. T. Greener, Commercial Agent, Vladivostock, May 10, 1903.*

Flour and Flour Mills in Manchuria.—The number of flour mills at Harbin has increased to six, with a daily production of 8,000 poods (288,896 pounds)—a little over 1,474 barrels. This flour is pronounced entirely satisfactory in quality wherever it is used, and is gradually controlling the market of Manchuria. It has reached Port Arthur in small quantities, but has not yet interfered to any appreciable extent with the importation of American flour, although doubtless it will have this effect in time.—*Henry B. Miller, Consul, Niuchwang, June 15, 1903.*

Siberian Trade Routes.—Last year the tea from China for European Russia took the old route via the Amur, and importers express their determination to use the same route this year, although the freight charge via Dalny and the Chinese Eastern Railway is lower than by the Amur and duty need not be paid in advance, while it must be so paid on the Amur. The reason given by the importers for choosing the Amur route is that insurance companies refuse to take the tea risks across Manchuria. Rice for Harbin goes by the Ussuri Railway to the Ussuri River and thence by the Amur and Sungari to Harbin.—*R. T. Greener, Commercial Agent, Vladivostock, May 20, 1903.*

Electric Tramway in Spain.—Consular Agent A. E. Carleton, of Almeria, calls attention to a concession to be granted for the building of an electric tramway between Mondariz and Porvino. A second section is to be constructed later. This will extend the line to Vigo. The entire length is to be 23 miles, almost equally divided between the two sections. The first is to be 10.5 miles; the other, 12.5 miles. The electric power is to be obtained and transmitted from two waterfalls on the River Tea, between Mondariz and Puenta Areas, and from a waterfall on the River Mino, about 15.5 miles from the middle of the line. The force at the first falls is 268 horsepower at the axis of the turbines, and of the second 1,375 horsepower. As the road requires only 375 horsepower, the balance will be used by various industries in the enterprising town of Vigo.

The consular agent also reports that another electric tramway is to be built at Linares. It would seem as if every mountain land on earth is looking toward a time when its waste waters can be worked up into electrical force or power for industrial, transportation, and all kinds of commercial purposes.

Spanish Railways in 1902.—The Anuario de Ferrocarriles for 1903, which will soon be placed on sale, contains interesting data regarding the railway traffic of Spain in 1902. During that year 231 kilometers (144 miles) of railway and 66 kilometers (41 miles) of tramway were opened to traffic. The railways transported 37,431,038 passengers—4,044,510 more than in 1901. The goods transported amounted to 19,629,268 tons—831,200 tons more than during the preceding year. The gross receipts were 283,829,344 pesetas ($54,779,063), against 265,366,601 pesetas ($51,275,754) in 1901, an increase of 18,463,043 pesetas ($3,563,308). The daily traffic was 53,773 tons and the number of passengers transported daily 102,550. The Government received in taxes from railway transportation 23,771,438 pesetas ($4,587,887), an increase of 680,677 pesetas ($131,371), as compared with 1901.—*R. M. Bartleman, Consul, Cadiz, July 17, 1903.*

Gas and Electricity in Spain.—According to the Boletin de la Cámera Oficial de Comercio de Cadiz of March, 1903, the following statistics show the number of gas works and electric plants in Spain and the amount of taxes collected thereon in the year 1901, the latest year for which statistics have been published:

During the year 1901 there were 79 gas works in operation in Spain, of which 20 were located in the province of Barcelona. On the other hand, the provinces of Albacete, Avila, Badajos, Caceres, Cuenca, Guadalajara, Huescar, Leon, Lerida, Lugo, Orense, Palencia, Salamanca, Segovia, Soria, Teruel, Toledo, and Zamora and the Canary Islands had none. During the year the production of gas was 136,853,231 cubic meters, which yielded a tax of 2,048,342 pesetas ($395,330).

The electrical plants in operation numbered 961, of which 266 were in the province of Barcelona. The provinces of Huelva and Orense had but two each. The annual production in "hour kilowatts" reached the figure of 42,248,657, which yielded a tax of 1,955,302 pesetas ($377,383).

Taxes from the manufacture of calcium, 27,834 pesetas ($5,372); customs duties collected on imported calcium, 154 pesetas ($30); taxes from the Basque provinces, 105,180 pesetas ($20,300).

Total taxes collected on gas, electricity, and calcium, 4,136,812 pesetas ($798,404).

—R. M. Bartleman. Consul, Cadiz, July 13, 1903.

Reopening of the Port of Mazatlan.—Consul Louis Kaiser writes from Mazatlan, Mexico, June 16, 1903, that that port has been declared open by President Diaz. All restrictions on traffic have now been removed.

Demand for Pig Iron in Solingen.—Consul J. J. Langer, of Solingen, Germany, on June 26, 1903, writes to say that he has an inquiry from a party there for pig iron for malleable castings of all kinds, which the party in question would like to obtain from the United States. Any information obtainable will be referred by the consul to the inquirer.

Brazilian Nuts for the United States.—The nut crop for this year, the season for which has just closed, was about the same as last year. This year, however, the United States has taken two-thirds of the product, of which Europe heretofore has taken the bulk. It is too early as yet to speak of the prospects for this season's crop.—*K. K. Kenneday, Consul, Para, July 7, 1903.*

Damaged Wool and Its Relation to Sheep Dips.—Consul E. S. Day, of Bradford, sends a pamphlet on Damaged Wool and Its Relation to Sheep Dips, a matter that has been the subject of investigation for some time past at the hands of a well-known Bradford wool expert, Mr. S. B. Hollings, who has just published the result of his researches. The pamphlet is on file in the Bureau of Statistics, Department of Commerce and Labor, and may be seen upon application by interested parties.

Parasols for India.—The Finanz-Chronik publishes a report from Calcutta to the effect that India is a large consumer of cheap parasols. During the year ended March 31 last almost 2,250,000 were imported. They were bought principally by the better classes. If the coolies also should become acquainted with them—and a beginning has already been made—the demand for parasols would grow immensely. The kind wanted is, of course, the cheapest possible.—*Richard Guenther, Consul-General, Frankfort, July 7, 1903.*

Combination of Shipbuilders on the Tyne.—Consul H. W. Metcalf, in a letter dated June 19, referring to his report of May 21, 1903,* in which he called attention to a combination of shipbuilders on the Tyne, incloses a prospectus of the undertaking. It seems that the combination has not only taken shape, but has been fairly launched with considerable advertising. A copy of the prospectus of the company has been received and is on file in the Bureau of Statistics.

Homesteaders in Northwest Canada.—From the Toronto Globe of July 22, 1903, I glean the following interesting statistics received by that journal from Winnipeg and considered official:

> Homestead entries made in the Canadian Northwest for the year ended June 30, 1903, numbered 31,002, as compared with 14,289 for the year ended June 30, 1902—an increase of 16,715. The figures for the month of June, 1903, show 6,644 entries, compared with 3,349 for the corresponding month of last year, an increase of 3,295.

—*M. J. Burke, Consul, St. Thomas, Ontario, July 28, 1903.*

Increased Emigration from Italy to the United States.—The disastrous effects of the failure of the cocoon crop of Piedmont, together with the further bad effects of the frosts and prolonged rains on the wheat, grape, and other crops of the province, have been exceedingly discouraging to the peasants, and the prediction is made that the coming year will witness a great increase, from this portion of Italy, in the emigration to the United States.—*Pietro Cuneo, Consul, Turin, July 10, 1903.*

Japanese Coal for America.—According to the Kobé Herald of June 13, 1903, a demand for Japanese coal has arisen in America, through a strike in the British Columbia mines. Two British steamers lately sailed for San Francisco with coal from Karatsu and Moji.

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*See ADVANCE SHEETS No. 1672 (June 15, 1903).

Though the freightage from Australia to America has risen by 2s. or 3s. (48 or 72 cents) per ton, a large amount of coal is being carried thence to America. When the strike ceases, there will be a fall in the demand for the Japanese coal.—*Samuel S. Lyon, Consul, Kobé, June 30, 1903.*

Prizes for Raising Canal Boats.—The Department of State has received from the Austro-Hungarian embassy at Washington, July 9, 1903, copies of specifications and plans, in German (which may be seen at that Department), for a ship-lifting device on the Danube-March-Oder Ship Canal, for which competitive prizes of 100,000, 75,000, and 50,000 crowns ($20,300, $15,225, and $10,150) have been offered by the Austrian Minister of Commerce. A report on this subject by Consul Frederick W. Hossfeld, of Trieste, was printed in ADVANCE SHEETS No. 1661 (June 2, 1903).

Petroleum Residue as Fuel for Locomotives.—According to a report of the general management of Roumanian railroads, 342 locomotives out of a total of 482 are designed to be fired either with residue of petroleum or with brown coal; 17 locomotives use residue of petroleum exclusively. The Monitor of Roumanian Petroleum Interests states that the Society of Petroleum Explorers and Producers has now requested the management of the Roumanian railways to change all the locomotives into burners of petroleum residue and to introduce this fuel into the railroad shops.—*Richard Guenther, Consul-General, Frankfort, July 6, 1903.*

Hungarian Prune Crop of 1903.—From the official horticultural journal of Budapest it is learned that the prune crop of Hungary will not be more than a low average crop. While in some localities good crops are promised, the excessive cultivation has materially lessened the general prospects. The reports from Bosnia and Servia are no more promising. Bosnia-Herzegovina will have, it is thought, only about one-half the crop of 1902. On the whole, the outlook for the prune crop is anything but encouraging. The Bosnia producers and dealers had each from ten to twenty carloads of prunes left over from 1902. Owing to the unfavorable prospects there is no bargaining yet for the new crop.—*Frank Dyer Chester, Consul, Budapest, June 30, 1903.*

Jade in China.—Large bodies of jade stone* are found near Hsu-Yen on the River Ta-Yang that empties into the Bay of Korea. Considerable of this jade is brought to this port by carts in large, rough blocks and exported to other ports in China. It is found in a variety of colors—green, white, brown, red, etc. It is extensively used for tablets, table tops, cups, bowls, rings, bracelets, pipes, cigarette holders, carved figures, etc. It is worked by a combination of steel instruments and wet sand, the sand coming from the province of Shansi. The mines are not far from the sea and the cost of getting this stone aboard ship would not be very great.—*H. B. Miller, Consul, Niuchwang, June 15, 1903.*

Cairo International Chamber of Commerce.—The French commercial attaché at Cairo reports the establishment of an international chamber of commerce in that city. The plans are supported by the British, French, Italian, and Austro-Hungarian chambers of commerce of Alexandria. According to its by-laws, the chamber will devote its attention to the general interests of commerce and manufactures; it will act as a court of arbitration in disputes between merchants, manufacturers, shippers, administrative bodies, corporations, etc. It is expected that this new chamber will greatly benefit commercial interests connected with Egypt by so consolidating these as to give them great power in effecting much-needed reforms in the collection of claims, the improvement of transportation service, the reduction of freight charges, the betterment of custom-house facilities, etc.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, July 2, 1903.*

Wages in Cuba.—The following wages in Spanish gold per day of ten hours' labor have been paid during the past year, and are at present paid, for skilled and unskilled labor in the cities and towns under the jurisdiction of this consulate-general:

Bookbinders	$1.50 to $2.00
Carpenters	2.50 to 3.50
Laborers	1.25
Masons	2.00 to 2.50
Mechanics	2.00 to 3.00
Painters	2.00
Printers	2.00 to 2.50
Shoemakers	1.00 to 2.00
Tinsmiths	1.00 to 1.50

—*F. Steinhart, Consul-General, Habana, July 4, 1903.*

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*A sample, in the rough, can be seen by parties interested at the Bureau of Statistics, Department of Commerce and Labor, Washington, D. C.

Japan vs. Ceylon Teas.—The Kobé Herald of June 19, 1903, says that since the opening of the tea season this year the market for common grades of tea has been very quiet and buyers have been few. This state of affairs is due to the fact that a considerable quantity of green tea in imitation of Japan tea has been shipped from Ceylon to the United States and Canada, and it is being sold at lower rates than the genuine Japan tea, with a view to ousting the latter from the market. The production of green tea in India last year was only 6,000,000 pounds; this year it is estimated at between 12,000,000 and 15,000,000 pounds, while it is intended to increase that quantity to 40,000,000 pounds, if possible. It is impossible for Japan tea to compete with Indian green tea in point of price, so that it is expected, says the Herald, that the commoner brands of Japan tea may be entirely deleted from the United States and Canadian markets in the course of three or four years.—*Samuel S. Lyon, Consul, Kobé, June 30, 1903.*

New Railroad in Switzerland.—Under date of June 19, 1903, Consul H. H. Morgan writes from Lucerne, Switzerland, that for some time past negotiations have been in progress between certain Swiss capitalists and the authorities of the Cantons of Soleure (Solothurn) and Berne, with the object of constructing a railroad between the towns of Soleure and Moutier (Münster), and for this purpose a company has been formed under the title of the "Aktiengesellschaft der Solothurn-Münster Bahn," in Soleure, with a capital of $1,430,000. Should this railroad be constructed it would supply a long-felt need of communication between central and western Switzerland, which are divided by the Jura chain of mountains, and would undoubtedly be a boon not only to Swiss commerce, but also to international passengers between England, France, and Switzerland.

Petroleum Briquettes.—A very simple process has just been conceived by a Mr. Maestracci for making petroleum briquettes, very much resembling those made of coal. The modus operandi is as follows: To a liter of petroleum are added 150 grams of soft soap, 150 grams of resin, and 300 grams of caustic-soda lye wash. This mixture is heated and well shaken. As soon as the mass begins to solidify, which should be in about forty minutes, the progress of the operation should be very carefully watched. To prevent the mixture running over, a little soda should be poured into the vessel, shaking the whole until solidification is complete. When the operation is finished the matter is run into molds to be made into briquettes, which are then placed in a stove for ten or fifteen minutes. It then only remains to allow them to get cold, when they can be used within an hour or two of being manufactured. By the addition of sawdust and sand the briquettes will be more solid and at the same time cheaper. From experiments, said to have been conducted on tugs, the inventor claims it has been clearly shown that these briquettes give three times more heat than ordinary coal, there being, in addition, the advantage of no waste remaining.—*Oliver J. D. Hughes, Consul-General, Coburg, July 14, 1903.*

Process Section at the Toronto Exhibition.—Publicity is given to the fact that one of the most interesting features of the new Manufacturers and Liberal Arts Building at the Dominion Exhibition to be held in Toronto, August 27 to September 12, will be the process section, in which twenty-seven different processes of manufacture will be shown in active operation. All these manufactures will include the very latest inventions in the different lines and on that account will be of the greatest interest, not only to Canadian visitors, but also to visitors from the United States. A few of the processes that will be on view are: Printing vast numbers of tickets by multiple press, bookbinding, and box making, all by the same firm; spectacle making, diamond cutting, glass blowing, die sinking, boot and shoe making, umbrella making, paint mixing, the manufacture of cotton and canvas bags, cotton spinning, elastic-stocking making, chain making, electric-light-bulb blowing, button making, binder-twine making, electric welding, needle and pin making, flax spinning, soap making, metal spinning, carpet weaving, cloth making, broom making, and a variety of others, including the process of photogravure. These processes will be in constant operation and are expected to lend greatly to the attraction of the building.—*E. N. Gunsaulus, Consul, Toronto, July 22, 1903.*

American Branch Industries in Ontario.—The establishment of American branch industries in Canada is steadily on the increase. Among the latest of such concerns announcing their intention to establish plants in Ontario may be mentioned the United States Steel Corporation, which, so it is reliably stated, will construct extensive works at Port Colborne, Ontario, at an early date. The company, I am informed, has already secured concessions from the Dominion Government for dredging a basin at the entrance of the Welland Canal, and has arranged for 6,000 electric horsepower from Niagara Falls, Ontario. Another proposed new industry for Ontario is the Canadian Westinghouse Company, which has been incorporated, with a capital of $2,500,000, to manufacture electrical machinery, safety devices, etc., at Hamilton, Ontario. The provisional directors include P. J. Myler, Hamilton; W. Y. Soper, Ottawa; and George Westinghouse and G. C. Smith, of Pittsburg, Pa.—*E. N. Gunsaulus, Consul, Toronto, July 22, 1903.*

American Barbed Wire in Paraguay.—Among the American manufactures that come to this port barbed wire, by reason of its good and lasting qualities, is more acceptable than that which comes from Europe, although the latter is cheaper. The American wire gives more satisfaction than the wire of any other country.—*John N. Ruffin, Consul, Asuncion, June 18, 1903.*

American Coal in Para.—A very noteworthy feature of the commercial situation here is the fact that within the past few days three large sailing vessels have arrived laden with American coal.—*K. K. Kenneday, Consul, Para, July 7, 1903.*

FOREIGN REPORTS AND PUBLICATIONS.

Conditions and Possibilities in Argentina.—A résumé of a long article published in the La Plata Times pictures the conditions and possibilities in Argentina. For the first three months of 1902 and 1903 the imports and exports were as follows:

Imports.

Description.	1902.		1903.	
	Pesos.		*Pesos.*	
Dutiable goods	22,667,792	$21,874,419	26,917,130	$25,975,031
Free goods	4,916,483	4,744,406	6,622,368	6,390,585
Coin	5,358	5,171	7,443,100	7,182,592
Total	27,589,633	26,623,996	40,982,598	39,548,208

Exports.

Description.	1902.		1903.	
	Pesos.		*Pesos.*	
Dutiable goods	28,813,586	$27,805,111	31,943,627	$30,825,601
Free goods	27,898,362	26,921,920	37,407,572	36,098,307
Coin	866,660	836,327	234,684	226,471
Total	57,578,608	55,563,358	69,585,883	67,150,379

For the first three months of 1903 the imports from and exports to the principal countries were as follows, the increase and decrease as compared with the first three months of 1902 being shown in the second and fourth columns:

Imports.

From—	Argentine currency.		United States currency.	
	Value.	Increase and decrease.	Value.	Increase and decrease.
	Pesos.	*Pesos.*		
Great Britain	11,714,000	+1,545,000	$11,304,010	+$1,490,925
Germany	4,442,000	+ 504,000	4,286,530	+ 486,360
United States	4,297,000	+ 989,000	4,146,605	+ 954,385
Italy	3,932,000	+ 419,000	3,794,380	+ 404,335
France	3,120,000	+ 768,000	3,009,800	+ 741,120
Belgium	1,362,000	− 490,000	1,314,330	− 472,850
Brazil	1,211,000	+ 313,000	1,168,615	+ 302,045
Spain	954,000	+ 203,000	920,610	+ 195,895
Uruguay	298,000	+ 117,000	287,570	+ 112,905
Paraguay	276,000	− 88,000	266,340	− 84,920
Holland	139,000	+ 30,000	134,135	+ 28,950
Chile	36,000	+ 8,000	34,740	+ 7,720

Exports.

To—	Argentine currency.		United States currency.	
	Value.	Increase and decrease.	Value.	Increase and decrease.
	Pesos.	*Pesos.*		
Great Britain	10,274,000	+ 387,000	$9,914,410	+ $373,455
Germany	9,393,000	+ 502,000	9,064,225	+ 484,430
United States	3,043,000	− 747,000	2,936,395	− 720,855
Italy	1,171,000	− 99,000	1,130,015	− 95,535
France	13,153,000	+2,400,000	12,692,645	+2,316,000
Belgium	5,852,000	+ 469,000	5,647,180	+ 452,585
Brazil	2,386,000	+ 347,000	2,302,490	+ 334,855
Spain	472,000	+ 140,000	455,580	+ 135,100
Uruguay	641,000	+ 82,000	618,565	+ 79,130
Paraguay	54,000	− 14,000	52,110	− 13,510
Holland	1,085,000	− 214,000	1,043,025	− 206,510
Chile	348,000	+ 197,000	335,820	+ 190,105

The principal imports into Argentina during the first three months of 1903 were: Beers, 1,597,000 pesos ($1,541,105); textiles, 11,438,510 pesos ($11,038,163), in which cottons figured to the amount of 6,344,387 pesos ($6,122,334); vegetable and mineral oils; drugs and chemicals; wood, 1,965,355 pesos ($1,896,568); paper, etc.

The following table shows the principal exports during the first three months of 1903 and 1902:

Description.	Quantity.		Value.			
	1903.	1902.	1903.		1902.	
Live stock:			*Pesos.*		*Pesos.*	
Beeves ....head...	49,752	36,575	1,542,255	$1,488,276	1,144,495	$1,104,438
Sheep ....do......	100,725	91,743	302,175	291,599	274,938	265,315
Horses ....do......	3,715	1,514	94,115	90,821	65,740	63,439
Mules ....do......	17,166	7,614	514,980	496,956	235,020	226,795
Asses ....do......	12,155	10,944	243,100	234,592	218,880	211,220
Total	183,513	148,390	2,696,625	2,602,244	1,939,073	1,871,207
Wool ....tons...	92,431	103,518	23,569,828	22,744,884	22,945,725	22,142,625
Hides and skins:						
Sheepskins ....do......	11,266	8,270	2,703,774	2,609,142	1,571,290	1,516,295
Cattle hides—						
Salted. ....do......	6,857	8,377	1,356,319	1,308,848	1,641,085	1,583,648
Dry ....do......	5,653	4,458	2,006,744	1,936,508	1,435,385	1,385,147
Horsehides—						
Salted ......pounds...	436,329	....	46,384	45,761	....	....
Dry ....do......	501,379	....	76,469	73,793	....	....
Frozen mutton ....tons...	20,008	14,116	1,600,648	1,544,626	1,129,292	1,089,767
Linseed ....do......	231,589	246,129	8,800,381	8,492,368	12,798,728	12,350,773
Maize ....do......	59,099	33,676	1,152,427	1,112,092	801,845	773,781
Wheat ....do......	656,230	201,827	15,880,761	15,324,935	5,611,077	5,414,690
Oats ....do......	13,343	9,659	285,539	275,546	230,846	222,767
Hay ....do......	40,749	27,799	397,300	383,395	281,716	271,856

It is to be noted that Argentina has entered, as indeed have a great many other South American states, upon an era of great industrial and commercial activity. While agricultural products make up the bulk of the foreign trade of South America, a good many partly manufactured articles are also exported.

Great Britain and Germany do a much larger business with South America than is done by the United States.

Trade of Foreign Countries.—The following tables have been prepared by the Bureau of Statistics showing the total imports and exports of the principal countries for the four months ended April 30 of the years 1901, 1902, and 1903:

Imports.

Country.	Four months ended April 30		
	1901.	1902	1903.
Belgium*	$129,908,000	$143,785,000	$151,010,000
France	290,106,000	300,439,000	311,773,000
Spain*	57,071,000	51,319,000	52,526.000
Italy	109,830,000	115,077,000	118,430,000
Austria-Hungary	107,577,000	115,690,000	127,911,000
Egypt	23,686,000	22,304,000	25,565,000
United States	290,354,000	309,783,000	356,488,000
Japan	43,197,000	43,805,000	57,159,000
British India	92,997,000	91,367,000	89,946,000
Canada	54,925,000	63,077,000	73,793,000
United Kingdom	868,082,000	870,364,000	363,274,000

* Value of principal articles only.

Exports (domestic).

Country.	Four months ended April 30—		
	1901.	1902.	1903.
Belgium*	$105,621,000	$110,702,000	$119.968,000
France	252,721,000	271,693,000	274,701,000
Spain*	25,415,000	45,051,000	46,518,000
Italy	87,916,000	93,347,000	96,453,000
Austria-Hungary	116,646,000	121,988,000	132,042,000
Egypt	28,528,000	32,062,000	35,751,000
United States	490,964,000	443,198,000	497,364,000
Japan	36,052,000	37,177,000	40,413,000
British India	131.045,000	151,755,000	164,727,000
Canada	37,026,000	45,241,000	47,202,000
United Kingdom	451,622,000	444,283,000	466,830,000

* Value of principal articles only.

In the case of Germany, Belgium, France, Italy, Austria-Hungary, Japan, and China the import figures given in the above summary represent imports for home consumption only. In all cases the export figures represent exports of domestic produce.

A comparison of the total figures for the five months ended May 31 is possible for four countries, as follows:

Imports.

Country.	Five months ended May 31—		
	1901.	1902.	1903.
Belgium*	$162,892,000	$180,772,000	$194,015,000
France	364,937,000	368,485,000	390,268,000
United States	370,105,000	388,569,000	436,516,000
United Kingdom	1,074,191,000	1,081,057,000	1,067,070,000

* Value of principal articles only.

Exports (domestic).

Country.	Five months ended May 31—		
	1901.	1902.	1903.
Belgium*	$133,413,000	$140,170,000	$151,927,000
France	326,991,000	340,864,000	339,895,000
United States	613,642,000	544,502,000	596,813,000
United Kingdom	565,195,000	555,380,000	585,220,000

* Value of principal articles only.

The latest figures available as regards other countries from which returns are received by the Board of Trade Journal (British) are as follows:

Imports.

Country.	1901.	1902.	1903.
Russia (2 months)*	$41,390,000	$40,791,000	$41,817,000
Germany (3 months)	311,427,000	325,671,000	361,746,000
Portugal (2 months)	10,745,000	9,328,000	10,283,000
Mexico (2 months)	10,331,000	10,132,000	12,307,000

* European and Black Sea frontiers.

Exports (domestic).

Country.	1901.	1902.	1903.
Russia (2 months)*	$44,620,000	$54,431,000	$60,855,000
Germany (3 months)	256,075,000	258,264,000	285,313,000
Portugal (2 months)	4,589,000	4,604,000	5,080,000
Mexico (2 months)	10,808,000	11,796,000	11,699,000

* European and Black Sea frontiers.

Watch and Clock Trade of Japan in 1902.—The Swiss consul-general at Yokohama, reporting to his Government, says:

Japan's importations of watches fell off in 1902 fully one-half. The figures for a series of years were as follows:

Year.	Number.	Value.	
		Yen.	
1870	492	2,540	$1,265
1875	20,778	148,101	73,754
1880	46,601	297,395	148,102
1885	27,014	170,827	85,082
1890	140,335	734,931	365,996
1895	188,722	923,022	459,665
1896	348,815	1,897,480	944,945
1897	305,894	1,901,813	$947,104
1898	531,372	2,960,177	1,474,168
1899	47,734	237,716	118,383
1900	144,891	729,747	363,415
1901	100,437	432,555	215,413
1902	65,516	234,150	116,607

The falling off in the importations was due to the increase from 5 per cent to 25 and 30 per cent ad valorem duties.

The following table shows the part played by the nations named in Japan's imports of watches:

Country.	1902.	1901.	1900.	1899.	1898.
Switzerland	$89,934	$189,487	$296,388	$89,686	$1,184,790
France	13,699	14,534	56,407	7,207	18,962
United States	2,771	10,097	7,221	18,017	263,319
Germany	2,353	574	2,233	1,379	5,786
Great Britain	7,845	631	1,118	2,094	1,314

The greater part of those credited to France came from Switzerland. The very dear watches, noted in the returns as chronometers and deck watches, credited to Great Britain were almost all of Swiss origin. The German watches were mostly of the cheap grades.

Watch cases.—In 1902 Japan imported watch cases worth 233,949 yen ($116,508) and in 1901 worth 335,891 yen ($167,275) from the following countries:

Country.	1902.		1901.	
	Yen.		*Yen.*	
Switzerland	69,215	$34,469	167,473	$83,402
France	19,786	9,854	16,491	8,213
United States	144,867	72,145	149,991	74,697

The imports of clockworks and parts of watches were, for the years given, as follows:

Country.	1902.	1901.	1900.
Switzerland	$45,346	$124,762	$89,257
France	14,790	14,134	29,088
United States	66,299	70,007	105,352
Germany	1,130	70	696
Great Britain	1,648	3,298	4,679
Total	129,213	212,271	229,072

The wall-clock industry of Japan, now in a fair way to succeed, began under considerable difficulty. A factory for watches and wall clocks opened in Tokyo in 1875 closed down during that year. In 1879 another factory was opened and closed. In 1886, however, a factory was successfully launched in Nagoya. Thence the industry has spread and promises ultimate success. Nagoya is turning out watches worth 500,000 yen ($249,000) annually.

Japan's importation of pendulum clocks.—Japan's importation of pendulum clocks for 1902 and 1901 is shown in the following table:

Country.	Number.	Value.
Germany	58,610	$32,564
United States	5,636	9,486
Great Britain	90	1,727
France	330	1,650
Total of all, including countries not enumerated, for 1902	64,692	45,661
Total for 1901	118,118	85,136

The importation of parts of clocks has fallen off, as shown by the following table:

Country.	1902.	1901.
United States	$9,472	$37,236
Germany	2,653	9,146
Great Britain	271	561
France	281	506
Switzerland	7	263
Belgium		78
Total	12,684	47,790

Anglo-German Commercial Relations.—The following is from the London Times of July 9, 1903:

Sir William Ward, British consul-general at Hamburg, in a report on the trade of his district for last year, observes that the existing régime under which Great Britain and Germany accord to each other most-favored-nation treatment (Germany, however, excepting Canada) will come to an end in December next. Opinion in the mercantile classes of Hamburg and of the other important German seaports is strongly in favor of maintaining the present relations between Germany and the British dominions and of making a treaty similar to the existing one for a term of at least ten years, and it is hoped at the same time that means may be found for placing the commercial relations of Germany with Canada on a satisfactory footing. The importance of Anglo-German commerce is so great that the result of the negotiations about to be commenced in Germany for new treaties with other countries will be watched with keen interest, as the future commercial relations between the British and German Empires will be affected by them. The leading commercial classes of Hamburg have recently expressed the hope that all those duties mentioned in the new German customs tariff for which no minimum rates have been specially provided, and which were increased by the customs committee of the German Parliament beyond the figures originally fixed by the Government, will be reduced again under the new treaties, not merely to the previous figures, but to the rates fixed by the conventional tariff. The Hamburg Chamber of Commerce, in its last report, also earnestly recommends that no commercial treaty should be concluded with any country without a clause providing for the most-favored-nation treatment to Germany, so that the latter may be able in future to compete on equal terms with other countries in the markets of the world.

As regards British trade with Hamburg, the consul-general states that the exports and imports were larger in 1902 than in 1901, and the number and tonnage of British ships entering the port were the largest on record. In a total tonnage of seagoing ships of 8,688,627 tons entering Hamburg in 1902, 3,125,906 were British, 4,617,373 German, and 2,603,000 tons were from the United Kingdom. The figures for the shipping show a decrease in the total tonnage of the carrying trade between Hamburg and non-European countries, more especially the United States, and an increase in that with the United Kingdom. The consul-general fears that sufficient attention has not been given in Great Britain to the effect on trade of the German-Levant tariff of freights for goods sent from inland German towns under through bill of lading to Levantine ports. This tariff has assisted in rapidly developing German trade with the Levant and the Black Sea to a greater degree than even the East Africa tariff has built up the trade between Germany and that region. Last year (1902) the total imports of Hamburg by sea amounted to £112,543,622 ($547,693,936) and the exports to £93,094,325 ($453,435,326). The imports from the United Kingdom were £19,752,797 ($96,126,987), or 11½ per cent of the whole, and the exports £22,223,900 ($108,152,499), or 20⅓ per cent of the whole. Hamburg's imports from British North America last year only reached £382,396 ($1,860,930) and the exports £875,141 ($4,258,873). More than half the entire trade between Great Britain and Germany passes through Hamburg. As to trade with Canada, contrary to the experience of 1901 and previous years, the import trade of Hamburg from Canada has increased and the exports have diminished. Probably this is due to temporary causes, for since 1898—the year in which Canadian imports ceased to get the most-favored-nation treatment in consequence of Canadian preferential treatment of the trade of the mother country—Canadian imports to Hamburg have been declining, while the exports from Hamburg have increased in volume and value, as appears from the following figures:

Year.	Imports from Canada.			Exports to Canada.		
	Quantity.	Value.		Quantity.	Value	
	*Cwts.**			*Cwts.**		
1898	1,997,694	£576,575	$2,805,902	1,253,152	£717,539	$3,491,903
1899	970,102	315,321	1,534,510	1,252,618	827,805	4,028,512
1900	719,910	316,452	1,540,056	1,029,214	662,609	3,224,586
1901	439,390	257,266	1,251,985	1,655,144	977,646	4,757,714
1902	625,628	382,396	1,860,930	1,493,262	875,141	4,258,873

*1 cwt.=112 pounds.

Hamburg absorbs 70 per cent of the trade of Canada with Germany. The imports from Canada chiefly affected are rye, wheat, maize, barley, oats, butter, lard, and salted and smoked meat; while buckwheat, pease, phosphorus, asbestos, train oil, clover seed, linseed, wood, wood pulp, cotton waste, and canned goods have remained much the same since 1898. As regards exports from Hamburg to Canada, sugar, chemicals, drugs, nitrate, pig and smelting iron, iron bars and iron manufactures generally, glue, gelatin, glass bottles, porcelain, and toys have increased in the last three years; while rags, peltry, paper, tanning extracts, and textiles have declined.

International Trade Situation.—The Russian-German Messenger, in its issue of July 1, 1903, urges, in its leading editorial, the importance of nations getting the opinions of distinguished disinterested experts in all their efforts to establish reciprocity in their trade relations. The Italian Minister of Finance, Luzzatti, says the Messenger, is such an expert. In an essay from his pen, published in a leading Viennese journal, he deals with the dangers that are likely to arise from a too careless consideration of the mutual interests and relations involved in the formation of treaties of reciprocity, particularly those affecting trade. Among other things, he says it is not good policy to pull down an old house till a new one has been built; in other words, it is far from wise to break from an old trade treaty before the new one is in force. In this way nations will be able to avoid the tariff wars that were never known to benefit anybody, least of all those engaged therein. The spirit of equity, he says, counts for much in international affairs, even when dealing with the weak as well as with the strong. It carries the farthest and lasts the longest. The word reciprocity, or what the word stands for—mutual benefit—is now an axiom in the commercial-political world. It alone can prevent the awful stupidity of a tariff war. Writing of a possible tariff war between Germany and Russia, M. Luzzatti says:

> Suppose Germany does put a maximum tariff on Russian cereals? Who will be benefited thereby? Hungary, Roumania, Argentina, the United States, and others—not Germany or Russia. If it puts its maximal tariff on all importations of grain it will have on its hands a universal tariff war, and that for so powerful and envied a State would be the worst thing possible.

Germany must see, continues the Italian statesman, that it will invoke universal industrial opposition if the Bundesrath does not reduce the tariff rates some points below those established by the Reichstag's minimal. If it does not do this, it will be found wanting in the demands of duty. There is no lack of ways and means to make good the losses to the nation's producers. In France premiums are offered and paid, taxes are reduced, etc. Who, for the sake of a few cents would wish to plunge Europe or the world into such a war? Industrial peace is worth everything and every effort. Government must see that the absence of trade treaties may mean war.

As in politics, continues the distinguished statesman, so in industrial life, danger and the desire for gain must be kept in the right relations to each other. At present, in Europe, there are signs of tariff war, and yet the chance to win is small and might be secured by a much cheaper process. This is so self-evident that it must appeal to all except one-sided or blinded industrial leaders. It is unwise to let the peace of the world depend upon people who want to try their newly invented explosives, who for the sake of these would let loose the dogs of war. Even if the cereal-raising farmer is injured, it will not be hard to make up to him in some way the amount he loses by the reduced rates. Besides, foreign imports can be aided by means of reduced railroad rates. To find compensation for a devastating tariff war, or for the breaking off of old commercial connections, one will have to look long and far.

Development of the World's Steel Industry.—The Deutsche Industrie Zeitung says that of all the countries producing steel in 1902 the United States led, with an output of 15,000,000 tons. These figures grow in importance when it is remembered that the world's production in 1894 was only 12,851,000 tons. Germany's production in 1902 was 7,780,000 tons, one-half that of the United States; while England's was only 5,000,000 tons, or one-third the production of the United States. The world's total steel output for 1902 was estimated at 35,000,000 tons. This would indicate a growth of 700 per cent in twenty-two years, or an increase from a little more than 4,000,000 tons in 1880 to 35,000,000 tons in 1902. The great increase is due to the introduction and improvement of the processes, notably the flame furnace. Pennsylvania leads all parts of the world in the use of this furnace, followed by Illinois, New England, Ohio, etc.

The steel produced by the Bessemer process during the last fifteen years was used mostly for rails. In England more than half of the steel produced by the Bessemer process went into rails. In Germany and the United States the proportion is not so large. While the United States produced 9,306,471 tons of steel ingots in 1902, it turned out only 2,876,293 tons of steel rails, or about 30 per cent of the steel-ingot production. In Germany the amount of Bessemer steel put into rails is proportionately smaller. Because of the resisting power of the steel, the wear and tear on the rails is far less; but the manifold uses to which the steel can be put has taken away somewhat from the importance of steel-rail manufacture. The last twenty years has resulted in an age of steel. Three times as much steel is now produced as in 1894. The universal opinion seems to be that the production of steel is to go on increasing. If, during the next twenty years, the same rate of increase is maintained as marked the past, 1923 will see an advance of from 20,000,000 to 25,000,000 tons in the world's total production. In this enormous increase the United States, according to experts, is to play the important part. At the very least, this opinion seems reasonable. The United States now uses in a year 30,000,000 tons of the very best iron ore. In twenty years this would mean a total of 600,000,000 tons—possibly the exhaustion of the sources of supply.

World's Demand for Tool-Making Machines.—The Deutsche Industrie Zeitung, in its issue of July 17, 1903, calls attention to a congress or convention of Germany's tool-machinery makers. Reports of those present went to show an increase of business in the Empire, but the orders were not large enough nor the prices satisfactory. The orders from the Government were not nearly as large as desired. Complaint was made against the custom of the large iron mills of contracting for machinery only on condition that part payment be made in the iron or steel products of the mills. Another evil complained of is the custom of the iron or steel mills of making their own conditions when contracting, instead of following, as formerly, well-established customs. In the matter of contracts in which it is provided that the tool makers take steel or iron from the mill, great abuses have crept in. The contract provides sometimes that fully 50 per cent of the bill be paid in material. Inasmuch as the greater part of a tool-making machine's value lies in the labor expended on it and the most of the material is cast iron, the demand of the mill to be allowed to pay for it in its products seems unfair and unjust. It is thought that little can be done in individual or isolated cases, but that a combination of the machine builders might effect a reform. Reports made to the convention regarding foreign trade show a decline. In France everything is quiet, Italy offers little encouragement, Spain promises great things by and by, particularly for the marine. The United States, it was said, must be given up as hopeless because of its own development of machine making.

Trade of Dutch Guiana.—The Dutch colony of Surinam did a business in 1902 of more than 10,299,728 gulden ($4,140,491). The imports amounted to 6,183,074 gulden ($2,485,596) and the exports to 4,116,654 gulden ($1,654,895). The countries participating in this trade were:

Country.	Imports.	Exports.
Holland	$1,307,322	$568,071
Great Britain	295,009	27,132
United States	665,973	839,958
France	10,743	35,857
British Guiana	187,314	176,704
French Guiana	149,599	....
Curaçao	11,608	7,473

The most important articles were beer, flour, butter, oleomargarine, preserved fruits, machines (for factories, farms, mines, etc.), steam engines, brandy, gold in bars, cereals, ironware, cheese, all kinds of ready-made clothing, cotton goods, oils of all kinds, rice, salt pork, dyes, and corned beef. Almost if not quite all of these are among the staple productions of the United States.

Trade Opportunities in Bulgaria.—According to a recent report by the British consul-general at Sofia, published in the Board of Trade Journal, London, a larger trade in dyes, paints, etc., glass and glassware, and paper and paper goods could be had by working for the trade. In all woolen cloths, continues the report, there is a large and increasing business, but buyers complain of the necessity of buying whole pieces of 40 or 50 yards of very expensive material, thus locking up a large capital. The report also states that the steady increase of Italian cotton imports is still a remarkable feature of the local trade. There is stated to be a certain opening for trade in machinery, and that sewing, knitting, and agricultural machines and implements could be pushed with advantage.

Roumania's Commercial Methods and Markets.—A report of the Austro-Hungarian consul-general for Roumania as published in the Handels Museum is full of interesting items and suggestions. It says:

> Roumanians often change the places in which they purchase their imports. The merchants buy of many, because they believe it to be best to do so. It often happens that a foreign firm that has had good results will run down in one season to one-third of what it sold the year before. This is due partly to sharp competition and to the agents. An article that has had a great run may be so modified in make-up, quality, etc., as to secure considerable reduction in the selling price. Now, if the Roumanian merchant fails to post the manufacturer from whom he gets his supplies, or the factory fails to find out the cheapening changes made by others, it loses the place it once held and finds it exceedingly hard to regain it. The Germans are always appearing with novelties and modifications. They cause the competition.
>
> In 1902 Austria-Hungary sold Roumania quite a large number of goods that hitherto came almost exclusively from Germany. Austria is devoting more attention to Roumania's markets. Her success therein is due very largely to the fact that her agents sent thither have been oftener at the places of business of the Roumanian merchants and manufacturers. The great difficulty of finding foreign markets and the efforts to obtain them have taught that to get and hold them parties have to put in a personal appearance, and to do it frequently. This is the only way to secure the sales and to get better prices. Agencies play a very important part in Roumania's trade relations. The representatives, however, are often lacking in knowledge of the branch or branches they represent. This is a great drawback. They accept anything that is offered. Agents will be found selling Swiss cheese, wire, and woolens. Very few Roumanian agents have their business arranged in departments, and few have trained clerks.
>
> More difficult than securing business is the transaction thereof. One can not be

warned too often to go slowly if one wants to go safely and securely. The seller should see to it that he gets an accurate statement of the weight, finishing, color, packing, or putting up of the article or articles to be sold. He should receive this information from his agent. It should be in writing, and when this is not possible he should demand and secure samples. Even then, before the goods are shipped, it would be wise to send on samples and ship only after acceptance on this basis by the purchaser. Doing this is of inestimable value in selling textiles. It lightens the labor of all concerned and protects the seller from unjust claims. England ships no goods until she has sent her reference samples and has had them accepted. Thus, for this reason, England seldom or never has a bill of goods refused or sent back. If one gets information to the effect that a man or firm ordering is not reliable, the best thing to do is to refuse to fill the order, otherwise the party ordering will surely take the first chance, on the flimsiest pretext, to put in claims for discounts and for long credit.

The quoting of credits in Roumania is often very optimistic. Firms with very small active capital often get credits that bear no real relation to their actual financial conditions. The result is that they use the easily acquired credits to expand their business far beyond a profit-making margin. It is not wise, therefore, for foreign firms to begin to have direct business relations with the small Roumanian houses. This is particularly true in regard to textiles. Even if better prices are obtained by direct trade, all kinds of claims are made, and it not infrequently happens that shipments have to be sold far below the invoice prices because of inability to otherwise dispose of them, or they must be sent to some other place, thus entailing extra expense.

Methods Needed to Secure Foreign Trade.—The British consul at Asuncion, in the British Board of Trade Journal, says:

With the object of obtaining information as to the classes of goods sold and the manner of doing business with houses in the United Kingdom, I have lately visited and conversed with some of the principal firms here. * * * My informants declare that the nonadoption in the United Kingdom of the metric system of weights and measures is a serious drawback to our trade. What is wanted, they declare, to increase the sale of British goods is an agent in Asuncion receiving samples of all kinds from firms in the United Kingdom. * * * In previous reports allusion has been made to the offer of the Chamber of Commerce of Asuncion to devote a portion of the space of their showrooms to samples of British goods. It is to be regretted that no response has been made to this offer.

Below are the official figures reported by the consul of the values of the imports into Paraguay during the year from the United Kingdom, France, and Germany:

United Kingdom	$837,646
France	401,320
Germany	316,405

The chief business houses in Asuncion are of Spanish, German, French, and Italian nationality.

Further on in his report the consul says:

In view of the development of the chilled and frozen meat trade between the Argentine Republic and the United Kingdom, it is perhaps of interest to consider whether a branch of this industry could not be made profitable in Paraguay. In this country [Paraguay] the price of good slaughter animals is one-half that of such animals in the Argentine Republic, being in the Argentine from £5 to £5 10s. ($24.33 to $26.76) per animal and here £2 10s. to £3 ($12.16 to $14.60). * * * Paraguayan meat, if in good condition and properly handled before slaughter, is of fair quality, the animals being, of course, fed entirely on natural grasses.

Efforts of French Exporters to Secure Foreign Trade.—Das Handels-Museum of July 2, 1903 (organ of the Austrian Government), says:

Louis Olivier, editor of the Revue Générale, is organizing a party of French exporters to visit the Levant for the purpose of studying its trading possibilities. He has secured the support of a great many geographical societies, chambers of commerce, and industrial unions in France, Algiers, and Tunis. Parties already doing business with the Levant are expected, of course, to be very much interested in the movement. Even these, however, by means of personal contact with the merchants of the Levant, will be able to form new and profitable trade connections. Teachers and scholars of the higher grade commercial schools are expected to join the party, which is to sail from Marseilles about the middle of October on a steamer chartered for the trip and expects to visit every important city in the Levant and make long stays—several days at least in Constantinople, Smyrna, Saloniki, Athens, etc. The members of the French Chamber of Commerce at Constantinople are to aid in every way to secure such information as will help to make the expedition successful. It is hoped that this is only the beginning of many like expeditions, and that France is to lose at last that indifference to foreign travel which handicaps her in competition with other industrial states.

Importance of Commercial Representatives Abroad.—The Textile Mercury says:

Our consuls abroad are continually trying to impress upon British manufacturers the importance of being directly represented by competent commercial travelers and that a little personal intercourse with customers is far more productive of trade than any amount of correspondence and catalogues. Evidently aware of this fact, some of the leading Austrian manufacturers are, we understand, now organizing a perambulating sample exhibition on an extensive scale, which is to travel through all parts of Russia. The men in charge of this traveling commercial museum will be first-class experts in trade and manufacture who are familiar with Russan business matters and language. Among Japanese export merchants a similar move is now in contemplation. An ambulatory sample museum is to be sent to the towns and trade centers of Siberia. A sample warehouse, representing Italian manufactures and other products of that country, has been established in Smyrna, Asia Minor. It is an annex to the technical commercial school which has been conducted for some time past in that city by the Italian Government.

Trade in the Wuchow, China, Consular District.—In the report on the trade of Wuchow for 1902 by the acting British consul at that port, which appeared in the British Board of Trade Journal of

July 16, it is stated that no new lines of piece goods were introduced last year, but a small consignment of German silk-finished velvets and white broadcloth found a ready sale. The same may be said of cheap Japanese cotton cloths, flannels, and crapes. Cotton velvets, flannels, cashmeres, Italian cloth, and crapes, etc., are gradually being substituted for the native silk and cotton stuffs formerly worn, as they offer greater variety of texture and color, combined with cheapness. Fashions change in China as elsewhere, and a new cloth or color, if it suits the popular taste, is sure to find a ready sale.

Silk and satin ribbons of foreign make are coming into use for ladies' dress trimmings; they should be of narrow width, and, if possible, embroidered with flowers or some native design. There is a growing demand for cheap foreign underclothing among both sexes.

The import of foreign medicines into Wuchow grows slowly, but steadily. The best-known medicines at present are quinine in powder and tabloids, cod-liver oil and its emulsion, iodine and iodide of potassium, sulphate of zinc (for eye lotions), etc. This should be a large field for foreign materia medica, more especially in the form of patent medicines.

There is a general tendency among the well-to-do Chinese in Wuchow to substitute articles of foreign manufacture for native whenever the price of the former permits. In this way, cigarettes and cigars, condensed milk, coffee and biscuits, razors, scissors, soaps and perfumes, enameled-ware teapots, basins, etc., are coming into general use.

Attention is also called to the fact that the Chinese are beginning to use soap for shaving, and it is suggested that there might be a sale for a cheap scented shaving soap, preferably colored and packed in tins.

A Chinaman, and more particularly a Chinawoman, always looks to the box, case, tin, or bottle, as the case may be, when purchasing foreign goods. The covering, if it may be useful in the household, will always recommend an article to the bargain-loving Chinese.

Tobacco should be of mild quality and slightly sweetened to suit the native taste.

There is a large variety of foreign perfumes on sale in the Wuchow shops; they are chiefly of French and German manufacture, selling at 1s. to 1s. 6d. (24 to 36 cents) per bottle. Here, again, the article is recommended by the shape and quality of the bottle.

The import of rubber boots and shoes increased last year by 2,000 pairs. The current retail prices were: Boots, 3s. 6d. (85 cents) per pair; shoes, 3s. (73 cents) per pair. These boots and shoes are of native pattern, but they would be more acceptable if the soles were made at least one-fourth of an inch thick, similar to the ordinary Chinese shoe. The native does not wear these articles as goloshes over his own shoes, but instead of them; hence a light india-rubber sole does not afford sufficient protection to the foot in a country where there are no roads and where street pavements consist principally of broken bricks and stone.

British Trade in China.—The following observations, published in the British Board of Trade Journal of July 16, on the import and export trade of Nankin are extracted from the acting British consul's recent report to the Foreign Office:

> There can be no doubt that the taste for articles of foreign manufacture is growing among the people. In a native report on the trade of the city I read, for instance, that during the last few years all the native cloth shops in Nankin have been obliged either to close their doors or include foreign piece goods in their stock in trade. * * * A notable feature about the foreign imports into Nankin is the large and increasing share taken by Japan. In the sundries business she is making enormous strides at the expense, as a rule, of Germany, but also of the United Kingdom and the United States. * * * The success of the Japanese is due to the very careful way in which, with the assistance of their Government, they study the Chinese market and supply exactly the kind of foreign luxuries that the people want at a price which brings them within the reach of all. The quality of their goods is very poor, but they look good, and their cost is far below that of similar articles purchased in Europe. * * * The demand for foreign soap has been growing so rapidly among the Chinese that no less than three native companies have been formed within the last year or so to import the necessary machinery and manufacture the article locally. Only one of the companies seems to have come to anything, but the soap it manufactures has already a large and increasing sale in the city, and, as the returns show, a small quantity has even been exported. * * * It is true that the whole trade of the port is at present of little consequence, but business connections might now be formed which later on will be invaluable. * * *

The acting consul, in writing of the British trade at Wuchow, adds:

> There are now ten British firms in Wuchow, all represented by Chinese agents; these firms include two of the largest British houses in China, and it is, I think, matter for regret that they do not see their way to send a young Englishman here to push their interests. I am quite aware that the experiment has been tried and proved a failure, but conditions have changed during the last two years. Wuchow has grown in importance; competition, especially in the shipping business, has become keener, and if our people, at whose instance this river was opened to trade and who enjoy exceptional opportunities for prosecuting successfully their undertakings in this part of China, wish to maintain their present position in this West River trade, it is high time some serious efforts were made to this end.

Résumé of Italy's Trade.—The following, taken from the Moniteur Officiel du Commerce, shows that Italy's imports and exports for 1902, exclusive of the precious metals, were 3,248,150,949 lires ($626,893,133); of these, 1,775,742,751 lires ($342,718,351) were imports and 1,472,408,198 lires ($284,174,782) exports. These figures indicate a gain of 54,254,163 lires ($10,471,053) in imports and 97,950,308 lires ($18,904,409) in exports.

An increase is to be noted among all goods that pay duties, except wines and spirits, colonial goods, medicines, tobacco, chemicals, and perfumeries. Among the exports a decrease is noted in paints and dyes, cottons, books, paper, skins, minerals, cereals, flours, and food pastes. In the following table the prices given are the same as those taken as a base for the tariff of 1901–2:

Imports.

Description.		1902.	1901.	Increase.
Raw materials used in industries	lires	665,235,335	655,940,512	9,294,823
	dollars	128,390,420	126,596,519	1,793,901
Other than raw materials used in industries	lires	393,630,511	350,891,335	42,739,176
	dollars	75,970,689	67,722,028	8,248,661
Manufactured products	lires	354,537,214	353,954,492	582,722
	dollars	68,425,682	68,313,217	112,465
Food products	lires	362,339,691	357,702,249	4,637,442
	dollars	69,931,560	69,036,534	895,026
Total	lires	1,775,742,751	1,718,488,588	57,254,163
	dollars	342,718,391	331,668,298	11,050,053

Exports.

Description.		1902.	1901.	Increase or decrease.
Raw materials used in industries	lires	242,209,020	204,466,966	+37,742,054
	dollars	46,746,341	39,462,124	+ 7,284,217
Other than raw materials used in industries	lires	558,071,126	505,321,618	+52,749,508
	dollars	107,707,727	97,527,072	+10,180,655
Manufactured products	lires	309,555,437	311,428,518	− 1,873,081
	dollars	59,744,199	60,105,704	− 361,505
Food products	lires	362,572,615	353,240,788	− 9,331,827
	dollars	69,976,515	68,175,473	+ 1,801,042
Total	lires	1,472,408,198	1,374,457,890	+97,950,308
	dollars	284,174,782	265,270,373	+18,904,409

India's Imports.—According to the Deutsche Industrie Zeitung, the German consul-general reports from Calcutta that Germany's exports to India during 1901–2 show a considerable increase over 1900–1901. After Great Britain, with fully two-thirds of the total, Germany's rivals for India's trade are Austria-Hungary, France, Belgium, Russia, and the United States. Germany's share of the steel trade is emphasized. In this, Great Britain and Belgium are the only countries that supply more. It is remarkable that Belgium leads in this line, considerably ahead of Great Britain and seven times as large as Germany's shipments. In knives and hardware Germany follows closely after Great Britain. It has an important place in the lists of drugs, chemicals, medicines, dyes, and tanning materials. In machinery, Great Britain and the United States are far ahead. Among the cotton goods that go to India, hosiery and underwear occupy a very important place. The imports of these goods have gone up threefold in five years. In the importations of carpets, Germany comes after Great Britain. The same is true of woolen underwear. In furniture—fine furniture—rubber goods, and toys, Germany is second, Great Britain leading. Great Britain and Belgium lead in weapons, munitions of war, explosives, stoneware, china, etc., Germany coming third. Of the importations of paper, papier-maché, and writing materials, Great Britain and Austria-Hungary lead, with Germany third. In glass and glassware, Austria and Belgium have beaten the Germans. The United States leads her in instruments, scientific tools, books, printed materials, wagons, cars, etc.

As supplementary to the foregoing, the following figures, prepared by the Bureau of Statistics, show the commerce of the United States with British India for the years 1901–1903:

Year.	Imports from India.	Exports to India.
1901	$43,882,493	$6,251,804
1902	48,421,218	4,621,876
1903	49,774,589	4,795,411

British India's Foreign Trade in 1902-3.—According to the Nachrichten für Handel und Industrie, the part taken by the nations in India's foreign commerce is indicated by the following table:

Country.	Imports into India.		Exports from India.	
	1901-2.	1902-3.	1901-2.	1902-3.
Great Britain	$170,282,412	$179,115,300	$98,400,420	$102,867,408
Austria-Hungary	12,764,268	8,278,848	7,698,564	10,363,788
Belgium	9,763,092	9,989,568	15,285,996	16,046,100
France	4,460,832	4,635,392	28,766,664	29,602,584
Germany	10,004,472	7,004,556	32,957,148	32,930,064
Netherlands	1,941,408	1,999,404	2,674,944	2,621,160
Italy	3,158,676	2,707,668	9,456,264	11,004,112
Russia	10,320,288	8,766,792	681,048	1,248,372
Egypt	822,960	984,960	17,285,724	24,937,308
Mauritius	6,353,964	6,482,592	4,166,964	3,485,268
United States	3,819,636	3,930,120	27,115,236	27,546,804
Ceylon	2,936,088	2,268,000	14,408,720	14,277,060
Hongkong	3,528,360	4,879,764	31,884,516	30,156,948
China	2,273,832	2,263,376	24,997,248	21,222,324
Japan	2,284,288	2,670,732	22,525,776	18,904,428
Straits Settlements	7,549,848	7,531,016	20,538,360	24,423,120

NOTE.—Most of the goods imported into Hongkong and the Straits Settlements were reexported.

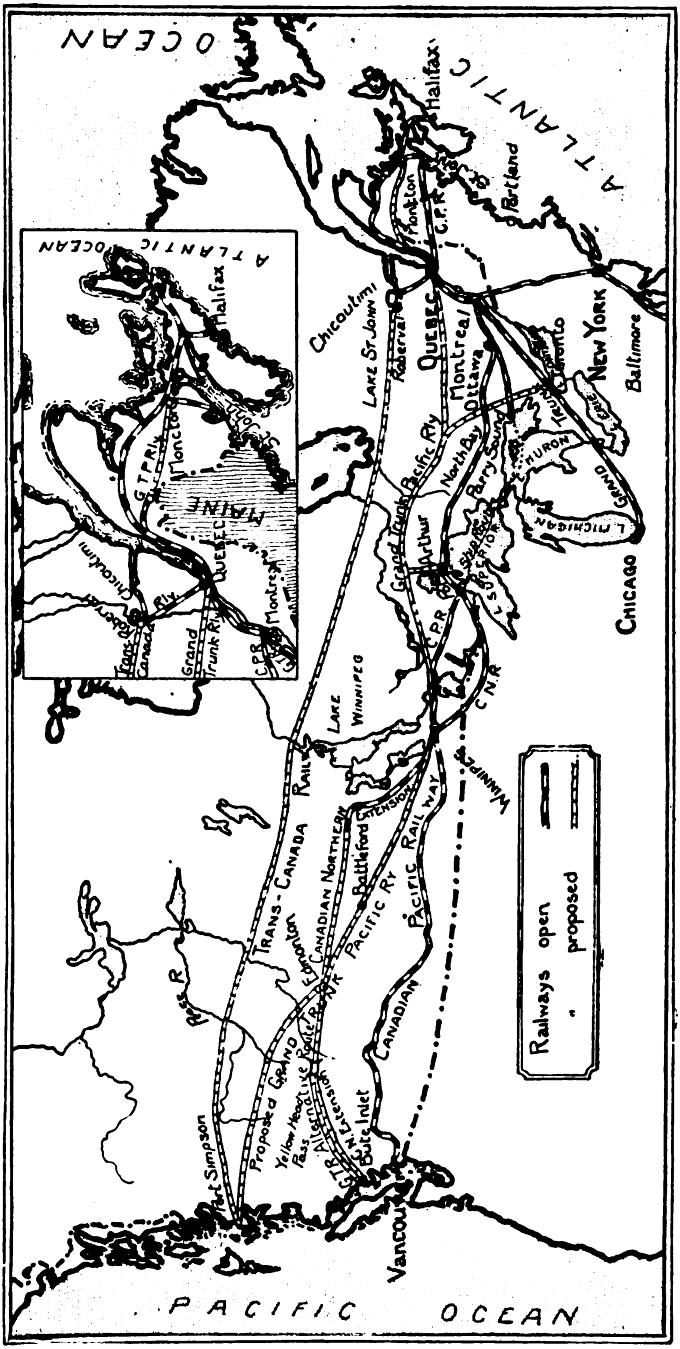
Canadian Transcontinental Railway.—The London Commercial Intelligence of July 16, 1903, contains the following information concerning the Canadian Transcontinental Railway, together with the accompanying map, which illustrates the route of the new railway sanctioned and to be constructed by the Dominion Government from Moncton to Winnipeg, and leased to the Grand Trunk Pacific Railway Company. The route from Winnipeg to the Pacific coast is not yet determined. The sketch shows the alternative proposals (1) via Edmonton to Port Simpson and (2) via Edmonton to Bute Inlet.

A colonizing railway.—All that we know with accuracy at present is that the Government have sanctioned a line from Moncton, New Brunswick, to Winnipeg, and thence across the great undeveloped track to Port Simpson, on the Pacific. In other words, Canadian ministers have fixed their eyes rather on the future than on the present and given their support to a great colonizing railway. The wisdom of this can hardly be called in question. To a certain extent the southern, or more cultivated, lands are already served, and in laying down a new ocean-to-ocean line of railway policy dictated catering for the newer lands and also extending it from extreme east to extreme west. Population is sure to follow the line, and thus one great object which the Government have in view will be assisted.

North Ontario.—The 1,200 miles between Quebec and Winnipeg will soon yield revenue. It possesses great natural resources in timber and clay, the latter spread over a belt of nearly 15,000,000 acres. Surveys have revealed the presence of minerals whose character and extent are variously estimated, though all prospectors agree that they are valuable. The climate and soil are adapted to the cultivation of hard wheat, and transit facilities will be bound to bring about settlement on a large scale. The railway will thus be earning money over one-fourth of its course while the other three-fourths are in process of construction.

A Government line.—During the last week or two speculation has chiefly centered around the point whether the Dominion Government should itself undertake the construction of the line or assist private enterprise. The trend of public opinion has been clearly in favor of the former course; it is fairly expressed in the resolution of the Toronto Board of Trade, who "urged strongly upon the Government of Canada the construction by the Dominion of a line from Quebec to Winnipeg, traversing the clay belt of northern Ontario and passing north of Lake Nepigon to Winnipeg—the use of such railway being permitted to all railroads under proper regulations." The alternatives to this course were to assist the promoters by a grant of land along the route, by a direct gift of money, or by a subsidy secured by mortgage. Public opinion refused to listen to the first; the financial advisers of the Government were opposed to the second; and to the third arose the natural objection that as two-thirds of the line at least will traverse a tract that is undeveloped and unremunerative, some years must elapse before working expenses could be met, much less interest charges. The Government have decided to construct the line themselves and to lease it to the Grand Trunk Pacific Company.

Terms of contract.—The contract now in preparation provides that the Government shall construct the line from Moncton, New Brunswick, to Winnipeg via Quebec and to lease it to the Grand Trunk Pacific Company for fifty years, on the conditions that for the first five years the company pays no rental to the Government, for the second five it pays the net surplus receipts over the working expenses, and for the remaining forty years it pays 3 per cent on the cost of construction.



THE CANADIAN TRANSCONTINENTAL RAILWAY.

The Government will guarantee the bonds for the line from Winnipeg to Port Simpson or to Bute Inlet, which will be built by the company. The Government stipulates that as far as possible all materials used shall be of Canadian manufacture and that the majority of the directors shall reside in Canada. The work between Moncton and Winnipeg is to be started at fifteen different points at the same time, and it is anticipated that the whole line will be completed in three years.

From ocean to ocean.—It will be seen that the line is in reality a railway from ocean to ocean. Port Simpson lies at the north of Hecate Straits and at the southern extremity of the Alexander Archipelago, facing Graham Island, on the Pacific. Moncton is close to the Northumberland Straits, which separates Prince Edward Island from the mainland of New Brunswick. With a line of rail connecting Moncton with St. John there is secured the double outlet into the Gulf of St. Lawrence (with shipping service to Newfoundland, Labrador, and the littoral of Quebec) and by way of the Bay of Fundy with the Atlantic. The line will also connect the important towns of Edmundston and Newcastle with Moncton, and thence with Halifax, Nova Scotia.

Diplomas for Students of Colonial Policies.—La Quinzaine Coloniale (the Colonial Fortnightly) says that the University of Nancy, where for two years past colonial economics and policies have been part of the curriculum, is about to issue diplomas to persons passing successful examinations in colonial studies. The conditions upon which the diplomas depend are as follows:

I. Matriculation after submitting baptismal and preparatory school certificates to the secretary of the faculty.

II. The period of study shall be for two years. Authorization to be examined after one year's study will be accorded in exceptional cases by the president of the university council.

III. Parties seeking a diploma will have to pass written and oral examinations; also an examination in practical matters.

(*a*) The written examinations will cover colonial subjects studied during the year preceding the examination. It lasts four hours.

(*b*) The oral examinations are arranged in three series and the questions are given from 0 to 20.

First series.—The questions cover—

	Coefficient.
Colonial legislation and economics	2
Colonial geography and history	2
Agronomics and colonial productions	2
General and colonial hygiene	1

The candidates may ask to be allowed to pass a practical examination in regard to colonial productions. In such cases they receive a supplementary rating with a coefficient 2.

Second series.—Examination in conversation of a foreign language, at choice of candidate, from one of the following: English, Spanish, German, Russian, and Italian; coefficient, 2. The candidates may be examined in more than one foreign language. Each language learned adds a rate with the coefficient 2, and is added to the other ratings. The candidates may elect a written examination in Arabic, Malgache, or Annamite to take the place of the above-named languages.

Third series.—This consists of an oral examination, at the choice of the candidate, in (*a*) scientific forestry and colonial forestry (coefficient, 4); (*b*) in colonial economics and commerce (coefficient, 4). Under *b* the candidate may choose to be examined in any four of the following subjects:

	Coefficient.
Commercial law	2
Public international law	3
Finance	4
Political economy	5
History of commerce	6
Financial mathematics	7
Accounts	8
Commercial organization and transportation	9
Materials of commerce	10

Persons receiving 150 points in oral examinations are admitted.

IV. The examinations will take place twice a year, in July and November.

V. The board of examiners must contain at least four of the teaching corps of the university. Supplementary members of the examination board may be added for the oral examinations and for the non-European languages.

VI. The diplomas will be signed by the members of the examining board, and shall indicate by name the subjects in which the person receiving it has been examined. It will also bear the seal of the university and the name of the president.

The Most Northerly Railroad.—The following information was summarized from various trade publications by the Bureau of Statistics:

July 14 will see a railroad opened that is destined to do much for Scandinavian and English commerce and manufactures. Because the Baltic freezes, England's capitalists, wanting a supply of Swedish iron all the year round, have built a railroad from the mines, or iron-ore deposits, near Gellivare to Ofoten, on the coast of Norway. King Oscar of Sweden has consented to be present at the opening. For some time ore has been carried on a branch of the road to the Norwegian fiord from the mines or hills of Kirunavara and Narwik. Gellivare is an inland town of Sweden, nearly 50 miles north of the Arctic Circle. It is the center of vast forests and iron-filled hills. It is much nearer to Lulea, a port on the Gulf of Bothnia, whither, were it not for the long winters, its wood and iron would naturally go; but the Gulf of Bothnia, a bay of the Baltic, is closed to navigation for four or five months of each year. Russia's tireless efforts to get a better seaport than St. Petersburg is due to a similar cause. That city is on the Gulf of Finland, another arm of the Baltic that is closed with ice for five months in each year. English enterprise and English capital have done and are destined to do much in the development of Scandinavia's resources—particularly those helpful to English industries. The long and severe winters of the Arctic are being conquered and the Baltic winter defied. Even the tourist is to be taken in summer time, at least, into the wild regions over which the road passes. It is singular that somewhat similar conditions confront England in her Labrador iron regions and that a proposition has been made to overcome them in the same way by building a road to the mines. It is thought that it might be made to pay in more ways than one; for Labrador (parts of it, at least), like vast regions in Scandinavia, is covered with primeval forests—woods rich in the very best kind of building material. With the price of wood rapidly rising, it may pay Labrador to put railroads far into her forests.

Changes in Japanese Character Writing.—The London Times, of July 9, 1903, says:

> This may sound much like the translation of any other language, but in fact to render a paragraph of French or Latin into English will be found an infinitely simpler business than to change ideograph writing, wherein a whole thought may be represented in a single character, or the ordinary writing, in which one "letter" may stand for a word, into Roman characters. To familiarize the ordinary run of men and women with the Roman method it will certainly be at first necessary to follow the plan proposed by the department, and begin the instruction in higher primary, if not in primary, schools. The scheme, if adopted, will probably come into operation at the beginning of the next scholastic year, leaving a few months for the preparation of the readers and other handbooks. The possibility of the Government setting aside the expert advice is remote, and therefore it is permissible to contemplate the suggestion as something by no means chimerical.
>
> When accomplished, the Romanization of the Japanese language will put the final touch of victory to that revolution begun some forty years ago. It is difficult to realize in a small measure what the step means to the Japanese nation. Not only will commercial relations be infinitely simplified; not only will ready intercourse between native and European be made a thousandfold easier and thus contribute to the adjustment of political difficulties; not only will the germs of western literature on the one hand and the classics of Japan on the other be rendered accessible to the ordinary translator, but the whole wealth and weight of European thought, opinion, and current criticism will become susceptible of reduction to a common medium, for the mere language of Japan is fairly easy to acquire. The great obstacle hitherto has been the practical impossibility of reaching the bulk of the people, who, acquainted only with character writing and not much in contact with western people, are still unable to grasp the European aspect of events; but this suggestion if carried out will remove that obstacle. In fact, the Romanization of the written tongue will mark the advent of Japan's maturity, and to this end its adoption in schools is essential.

Cultivation of Caoutchouc in Kamerun.—According to the Deutsche Kolonial Zeitung, the rubber trees, or plants, discovered by Dr. Paul Preuss on the right bank of the Mongo in the primeval forests of Malende, in Africa, are being set out for the purpose of securing a large supply of rubber. Investigation by experts revealed the fact that Preuss's wild rubber trees, of which he found hundreds, are members of the family *Kickxia elastica*. A planting company called Soppo secured the Malende land. For several years seed has been selected in Malende and planted in Soppo on the slopes of the Great Kamerun Mountains, below Buëa. The product of these trees bears a remarkable resemblance to the Para rubber, or caoutchouc of commerce, and is selling on the Hamburg market for more than 5 marks ($1.19) per kilogram (2.2 pounds). Some of the older trees have yielded an average of 4 kilograms (8.8 pounds) of sap per annum during the last few years. The trees near Malende are marked with tin slips so as to keep a correct account of their yield, condition, etc. It has been satisfactorily demonstrated that the "tapping" of the trees has done nothing to delay or to diminish their growth. The success in Soppo has aroused enthusiasm all over Victoria. The colonists are all turning their attention to the cultivation of *Kickxia*. They are buying seeds in Soppo and sowing them wherever success seems assured. They have taken to the Kamerun plant the more readily because Professor Preuss's experiments with *Kickxia* in the botanical gardens resulted in evidence which shows that *Kickxia*, in regard to rapidity of growth, early tapping, and size of the crop, is superior to all other caoutchouc plants, even the famous ones of South America. Observations made by Professor Preuss appear in his latest report to the New Guinea Company, of which he is director, and also in an address delivered in Berlin before the Colonial Congress. The number of rubber trees already planted by the company exceeds 200,000. In the botanical garden at Victoria there are 40,000 yearlings of the *Kickxia elastica*. The colonial division of the Empire's Foreign Office went to work in the most praiseworthy way to secure an exact description of the trees, with pictures of the trunk, leaves, flowers, and fruit. These were then sent gratis to the schools for colored colonists, with the request to distribute them all over the country and to ask the people to protect the wild trees, when found, and to do all in their power to plant others. This intelligent action of the Government has not been without good results. Recent reports tell of the finding of thousands of *Kickxia* trees in various parts of the colonies near Malende, particularly among the forests owned by the Koke Plantation Company and upon the 6,000 hectares (14,826 acres) of the Meanja plantation. Both sides of the Mpowo, which runs between the above-named plantations, are covered with a thick growth of *Kickxia*. Both of these plantations are going to work their present possession scientifically and are taking steps toward the planting of a large number of the new trees. Because of the greater profit in rubber they will turn to this, and give up the cultivation of cacao, which hitherto has held an important, if not first, place among their products. The Meanja Company, in order to more successfully carry out their projected plans, are going to increase their capital from 500,000 marks ($119,000) to 1,500,000 marks ($357,000). The large rubber factories of the Empire have been asked to cooperate in this work.

German Production of Potash.—The Deutsche Industrie Zeitung says:

The German potash-producing industry has attained considerable importance within a comparatively short time. Its fame has gone beyond national boundaries. Over 210,000,000 marks ($49,980,000) are invested in Germany in this industry, not counting the capital of the numerous boring or drilling companies which the Prussian financial department has invested in its potassium mines. The number of workmen employed in this industry in the Empire is about 30,000 and the value of the product nearly 58,000,000 marks ($13,804,000). The importance to which the industry has attained is due to the efforts of the German Kali Syndicate. The prices secured by this organization must be regarded by their most bitter opponents as of the greatest value to the national industries.

The German agricultural classes ought to look upon the acts of the Kali Syndicate as particularly advantageous to them, not only in the fight for better prices which resulted in the potash fertilizers being sold much cheaper at home than they are abroad, but especially because of the potash propaganda of the syndicate which resulted in extending the uses of potash as a fertilizer. The consumption of kainite, inclusive of hard salt (Hartsalz) and sylvanite, increased from 1,750,000 double centners (175,000 tons) in 1890 to 8,250,000 double centners (825,000 tons) in 1902. On each 100 hectares (247 acres) of arable land, 391 kilograms (862 pounds) of potash were used in 1902, while only 71 kilograms (156.5 pounds) were used in 1890. This enormous increase would have been unthinkable but for the well-planned and energetic efforts and activities of the syndicate. A single company would have found such efforts and results absolutely impossible. The regulation of prices by the Kali Syndicate is very much better from another standpoint. The fact that foreign countries have to pay higher prices makes it possible for the syndicate to sell its product to German agriculturalists a great deal cheaper than would be possible could the syndicate not regulate price and production. This campaign of price, in which the great German agricultural population has considerable interest, can be successfully continued only so long as the foreign consumers of potash do not succeed in obtaining a foothold in the Empire's commercial markets and mines. The recent efforts made by Americans—supported, we regret to say, by some Germans—to exercise a controlling influence over the German potash works must be regarded from a national standpoint as objectionable. Should these efforts nearly or even partially succeed, the potash market must receive a great shock and the continuance of the syndicate be made questionable. With the syndicate stands or falls the question of profit in the mines and mills of the German potash companies. For the number of the works their enormous capacity to produce is such that an entrance or an introduction of foreign competition would result in throwing the potash market into convulsions; at the same time, the possibility of finding profitable markets after the suppression of the syndicate would be very small.

The industrial crash of a great number of potash factories would be the inevitable result of any such change. If those in the syndicate and those outside wish to avoid the loss of markets and reduction in prices, they must look to a renewal of the contract with the syndicate.

These works, which will one day want to enter the syndicate, and which are endangering the position of the syndicate at the present moment by their unreasonable demands—particularly dangerous because of the present movement among the Americans—should keep their eyes open at this critical moment. They can endanger not only the success of the syndicate, but its very existence. If the syndicate can be continued, the hope of further development of the potash industry can be depended upon; but no one must be deceived into believing that the large profits of the past can ever again be realized. The syndicate can only guarantee the works enrolled on its lists continuance of moderate profits and to no one an enormous profit.

Germany's Foreign Trade.—The Statistical Yearbook of Germany says the Empire's imports for 1902 were 5,805,800,000 marks ($1,381,178,040); the exports, 4,812,800,000 marks ($1,145,446,400). In 1893 the imports were 4,134,100,000 marks ($983,915,800); the exports, 3,244,600,000 marks ($772,214,800). The share of the continents in the trade was as follows:

Imports.

Continents.	1902.		1893.	
	Marks.		*Marks.*	
Europe	3,617,700,000	$861,012,600	2,847,600,000	$677,728,800
Africa	164,100,000	39,055,800	71,900,000	17,112,200
Asia	418,000,000	99,484,000	235,300,000	56,001,400
America	1,477,600,000	351,668,800	881,300,000	209,749,400
Australia	122,700,000	29,202,600	97,000,000	23,086,000
All other places	5,700,000	1,356,600	1,000,000	238,000

Exports.

Continents.	1902.		1893.	
	Marks.		*Marks.*	
Europe	3,766,700,000	$896,474,600	2,507,900,000	$596,880,200
Africa	91,800,000	21,848,400	34,900,000	8,306,200
Asia	202,900,000	48,290,200	116,800,000	27,798,400
America	703,500,000	167,433,000	565,500,000	134,589,000
Australia	47,200,000	11,233,600	18,500,000	4,403,000
All other places	700,000	166,600	1,000,000	238,000

In these few figures, says the report, one is able to find some fundamental principles of the Empire's commercial politics. The most important is the part played by Europe in the Empire's imports and exports. The continents outside of Europe are far behind, hence are much more interested in securing markets in Germany than Germany is in securing markets in them. Germany's interest in Europe for the purpose of trading, based upon the above figures, is five times as great as is its interests in all America, and yet America sends Germany nearly half as much as she (Germany) buys from all Europe.

Miners' Wages in Germany.—The annual report of the Oppeln Chamber of Commerce says the average wages of coal miners over 16 years of age in Silesia fell from 1,029.7 marks ($245.14) in 1902 to 972.1 marks ($231.33) in 1903, a difference of nearly 6 per cent. There was a reduction of wages in the years 1892 and 1893—years of almost universal depression. Comparisons will show an increase, however, of fully 66 per cent in the last fifteen years. The average wage-workers' pay is only taken as a useful statistical norm. It includes the work of the expert and the apprentice, the able worker and the invalid. While in 1899 the average of 917 marks ($218.25) was set over against each workman above 16 years of age, the actual amount paid to miners in a certain section of Silesia was 1,169 marks ($278.22). The helpers of various kind were paid as follows: Drivers, 729 marks ($173.50); carpenters, etc., 994 marks ($236.57); general help in the mines, 698 marks ($166.32); above the mines, 724 marks ($172.55). Thus, the average of more than 90 per cent of the help employed in these Silesian mines was above 1,200 marks ($285.60). If these figures are applied to the actual miner, it will be found that his wages went up fully 6 per cent during the year 1902. It will be seen also that the wages paid to the miners who pick out the coal is in many cases more than 1,200 marks ($285.60); in a great many, 1,300 and 1,400 marks ($309.40 and $333.20); and in a few, 1,500 and 1,600 marks ($357 and $380.80). The report says that the same favorable conditions are to be noted in connection with the wages of ironworkers.

Development of Incomes in Germany.—The Deutsche Industrie Zeitung of July 17, 1903, says a remarkable addition was made to the economic literature of the Empire by the publication of an essay by Dr. Nitschke, a Berlin statistician, on the development of people's incomes. The total income increase in the 900-mark ($214.20) grade in the income tables for the years 1892–1900 was 2,000,000 marks ($476,000). The income tax begins on incomes of 900 marks ($214.20). Most of the increase—fully seven-eighths thereof—falls to the prosperous period 1896–1900. The larger part of the total increase, viz, 1,080,000,000 marks ($257,040,000), includes the lowest grades in the tax-paying lists—those incomes of $214.20 to $714. Dr. Nitschke says:

> The claim that the greater part of the profit of the world's work falls to the share of the upper classes, in view of the facts given to us by statistics, is not true; nor is there anything in the claim that there is a constantly developing inequality of incomes, since during the years 1899–1900 750,000 taxpayers passed from below the $214.20 grade, set by the State as the point at which the payment of an income

tax begins, to points beyond it. The claim that the middle classes are deteriorating is just as false. If an income of from 2,100 marks ($499.80) to 9,500 marks ($2,261) is taken as the basis of middle-class incomes, the census, or tax tables, will show that fully 750,000 taxpayers belong to this class. Of those paying on more than 9,500 marks ($2,261), there are 76,000, and more than 60,000 of these have incomes of from $2,261 to $7,259, while about 15,000 are taxed on incomes of more than $7,140. It is worth noting that the increase in the number of persons paying income taxes is much larger in the cities than in the country districts.

German Review of Korean Trade.—The following information is translated from the Berlin Nachrichten für Handel und Industrie:

One of the points of greatest interest in the Eastern World is Korea. It is a long peninsula with the Japan Sea on one side and the Yellow Sea on the other. It is about 80,000 square miles in extent and has between 8,000,000 and 10,000,000 inhabitants. It is chiefly interesting as the part of Asia in which the whole world is interested. It is said to be very rich in mineral deposits. By some it is regarded as the key to the whole eastern problem. Its imports and exports are not very important, but promise to be more so. The imports by years were as follows:

Description.	1898.	1899.	1900.	1901.	1902.
Imports	$5,810,325	$4,976,624	$5,323,628	$7,300,289	$6,727,620
Exports:					
Merchandise	2,807,176	2,431,954	4,593,441	4,203,367	4,131,399
Gold	1,168,064	1,367,382	1,967,842	2,480,386	2,515,533
Total	3,975,240	3,799,336	6,561,283	6,683,753	6,646,932

A fairly healthy movement is being made along manufacturing and commercial lines.

German Enterprise in Russia.—The Russian-German Messenger says that, in spite of sharp American competition, a Berlin furniture factory secured the contract to fit up the waiting rooms of 324 stations on the Siberian Railroad. The contract calls exclusively for wooden furniture—among other things, for 16,000 chairs of the same kind, tables, divans, washstands, sideboards, etc.

German Capital in the Transvaal.—The capital invested by Germany in the Transvaal is estimated by experts to be fully $150,000,000. It is invested in commercial houses, real estate, loans, mines, and industrial undertakings.

Machines and Implements in Russia.—The German consul at Rostoff reports, in the Nachrichten für Handel und Industrie, quite a steady demand in Russia for all kinds of tools, implements, machines, and other kinds of iron and hardware. He points, with some pride, to the part played by Germany in successfully supplying her share. Among the articles enumerated, surgical and optical instruments come first. He refers to American and English competition, particularly in the matter of electrical plants. He says the demand is great, since even the smallest cities are putting in electricity. They are enabled to do this because of cheap Russian petroleum. Guns and rifles of foreign make find ready sale and go in in huge quantities. Here again the competition is close. The United States and Great Britain send rifles, the latter sending the most expensive. Some German houses handle American and Belgian firearms. The demand for all kinds of agricultural implements, machines, etc., keeps ahead of the supply and is constantly increasing. Germany leads in selling plows, harrows, planting machines, cutting machines, and steam thrashing machines. A falling off in the importation of china, crockery, and textiles is noted. The business year begins just after the harvest, with the advent of the commercial travelers, at which time orders are booked. The goods are delivered in February. Notes for six months are the usual form of payment. In some cases nine months' notes are given and taken. At times payment will be put off so that a year's credit is often required. Thus only companies having large capital can compete in a field of this kind. People of small means have hardly any chance in Russia's foreign trade.

The consul says the Russian prefers to buy from parties who deliver the goods free from duties, freight charges, etc., and who state the prices in rubles and the weights and measures in the Russian or metric systems. Often the refusal to receive goods or to take them out of the custom-house is due to unpleasantness connected therewith rather than to bad intentions. In conclusion he says: "It is best, therefore, in almost all cases of foreign sales, to keep a representative in the field."

In connection with the foregoing it is interesting to note that the United States is rapidly increasing its exports of high-grade tools and machinery to Russia. According to the Bureau of Statistics our exports of agricultural implements, typewriters, and other machines and implements to European Russia in 1892 amounted to $3,053,924.

The following table shows the value of certain high-grade American machinery sent to foreign countries. It is from tables prepared by the Bureau of Statistics.

Exports of high-grade American machinery, 1892 to 1902.

Article.	1892.	1895.	1898.	1900.	1902.
Electrical instruments	$1,388,117	$1,912,771	$2,770,803	$6,435,766	$5,389,476
Cash registers *	....	....	....	813,096	1,144,062
Electrical machinery †	....	....	2,052,564	4,340,992	5,379,746
Metal-working machinery †	....	....	4,618,683	7,193,390	2,977,290
Sewing machines and parts of	3,133,992	2,260,139	3,136,364	4,541,774	4,022,697
Shoe machinery †	....	....	895,788	1,163,265	966,582
Steam engines:					
Fire	6,380	9,010	7,495	14,915	28,956
Locomotives	1,717,715	2,379,519	3,883,719	5,592,403	3,257,894
Typewriting machines and parts of	....	....	1,902,153	2,697,544	3,302,191
Total	6,246,204	6,561,439	19,267,569	32,793,145	26,468,894

* Not separately enumerated prior to 1900.

† Included in "all other machinery, etc.," prior to 1898.

Russia's Paper-Making Industries.—The Austrian consul-general, according to the Nachrichten für Handel und Industrie of July 11, 1903, reports as follows in regard to paper making in Russia:

Still, the situation is far from favorable. The cause is to be sought not only in overproduction and the universal industrial and agrarian crisis, but in particular conditions that in the very near future will work still further evil. Among the particular conditions or special reasons for the evils that now afflict the paper makers, the low state of the intellectual development of the people comes first. Besides, the direct purchasers of paper have developed great skill in holding back in their buying for speculating purposes. This results in reduced prices among the competing concerns. Again, the competition is still further intensified by the absence of any agreement as to production among the manufacturers. The chief difficulty is in the cellulose industry. A German cellulose company established works at Pernau (Livland), which soon set up a very successful series of competitive efforts against Russian manufacturers. Several cellulose makers, in order to more successfully meet this competition, established paper-making plants of their own. This reacted disastrously on the paper-making concerns already established. The disastrous results are seen in the declared dividends of 1902, which averaged only 2.78 per cent on the capital invested. If from this the losses are taken, the average earnings are reduced to 1.21 per cent. It is thought that the results for 1903 will be even lower. This state of affairs has led to poor and delayed payments. Many debtors demand a year and even eighteen months' time in which to pay, and these are often conceded. Even to all this, one has to add deductions from bills and uncovered or insecured credits. The consul-general warns parties exporting paper to Russia to pay attention to the fact that it is hard to find out the standing of Russian business concerns. The Finnish paper mills are successfully competing with Russia's factories, although they have to pay a small import duty. It has a better class of help, cheaper and better wood in unlimited quantity, and a water power that costs nearly nothing. Still Finland suffers from overproduction since it lost its power to export to England, being unable to compete with the Scandinavian countries. The future, therefore, for Russia's paper making is dark indeed.

Foreign Trade of Persia.—The Commercial Intelligence, in its issue of July 23, 1903, says:

The total import trade of the Persian Gulf ports was divided between the principal countries as follows, in 1900–1901:

Country.	1900.		1901.	
United Kingdom	£788,114	$3,836,487	£1,061,125	$5,157,068
India	1,034,824	5,036,163	1,296,799	6,302,445
France	119,712	582,598	174,303	847,115
Germany	23,078	112,312	21,341	103,717
Austria-Hungary	37,275	181,405	25,059	121,787
United States	633	3,080	1,578	7,670
Russia	572	2,783	12,346	60,000
Turkey	125,112	608,877	210,300	1,022,058
Belgium	3,047	14,828	3,625	17,618
Arabian coast	189,424	921,863	276,881	1,345,642
Persian ports	438,059	2,131,867	423,932	2,060,310
Total (from all countries)	2,873,485	13,984,293	3,617,409	17,600,614

Railway communication is at present in its infancy. There is a small railway from Teheran to Shahabdul-Azim of 6 miles. This is in the hands of a Belgian company. There is also a railway from Mahmudabad to Amol. The only good roads in Persia are those between Teheran and Kom and Teheran and Kazbin, each about 90 miles long.

Commercial Museums in Russia.—The British consul at Batum, in the British Board of Trade Journal of July 16, reports that in order to more successfully bring about a good understanding between Russian exporters and Persian Gulf merchants, and with a view to rendering the latter familiar with the diverse articles of Russian manufacture, the Russian Steam Navigation and Trading Company has decided to establish at Bushire and Bassorah permanent exhibitions of Russian industries, to be styled "Russian museums," where complete collections of products and articles of export manufactured by different firms in Russia will be exhibited, together with the f. o. b. prices labeled on them. The agents of the above company at Bushire and Bassorah have been instructed to organize museums of this kind in those towns.

Tools and Implements in the Transcaucasus.—The British consul at Batum, in the British Board of Trade Journal, calls attention to a movement among the Transcaucasian people to put better tools, implements, and machines into their shops and onto their farms. The desire to do this is based upon a belief that this is the only way in which the so-called house industries can hold their own in competition with the factories. The Government is giving moral and material aid to the movement. Among the articles affected, tools and looms for the preparation and weaving of woolen goods, silks, shoes, furniture, and household effects come first. An effort is also being made to get the Transcaucasians to turn from their primitive ways, tools, and farm implements to those of western peoples.

Foreign Trade of Revel.—According to a German consular report published in the Nachrichten für Handel und Industrie of July 13, the imports and exports of the Russian Baltic port of Revel were as follows during the year 1902:

From and to—	Imports.			Exports.		
	Rubles.		*Per cent.*	*Rubles.*		*Per cent.*
Germany	20,522,622	$10,569,150	45.28	1,839,897	$937,547	8.46
Great Britain	18,942,037	9,755,149	41.79	8,026,536	4,133,666	36.9
Denmark	3,706,752	1,908,977	8	7,341,599	3,780,921	33.75
Holland	931,172	479,351	2.05	1,474,848	759,546	6.78
Belgium	486,450	250,521	1.07	992,918	511,352	4.56
France	271,717	139,934	.6	2,013,933	1,037,175	9.26

Russia's Trade with Germany.—The Russian German Messenger publishes the following statistics covering the imports into and the exports from European Russia (Finland not included) from and to Germany during the years 1900–1902 and the first two months of 1903:

Year.	Imports.		Exports.	
	Rubles.		*Rubles.*	
1900	216,857,000	$111,681,355	187,635,000	$96,632,025
1901	208,823,000	107,543,845	179,413,000	92,397,695
1902	202,886,000	104,486,290	203,596,000	104,851,940
1903 (first 2 months)	31,819,000	16,386,785	28,441,000	14,647,145

Competition for Milk Separators in Russia.—The St. Petersburg Journal of July 4 announces that the Russian Department of Agriculture is instituting a competition for the best milk separators, which must be able to separate from 40 to 50 gallons per hour. The contest is open to both Russian and foreign manufacturers, and will take place next year at the Agricultural Museum, St. Petersburg. Two prizes—of $780 and $258, respectively—are offered. Entries must be made before February 15, 1904.

Beet-Sugar Area of Russia.—The German consul at Kief, writing in the Nachrichten für Handel und Industrie of July 11, 1903, says that according to returns made to the manufacturers of beet-root sugar in Russia the area planted in 1903 amounts to 513,528 dessiatines (1,386,525 acres), being 6.2 per cent less than in 1902. Of the 547,376 dessiatines (1,477,909 acres) planted in 1902, 22,505 dessiatines (60,763 acres) failed at seed time, leaving only 524,869 dessiatines (1,417,146 acres) to produce a crop.

Exhibition at St. Petersburg.—The Department of State has received from the Russian embassy copies of rules for an international scientific industrial exhibition to be held at the Palace Tauride, St. Petersburg, in November, 1903. The exhibition is designed to give a picture of a child's life, including nourishment, dress, instruction, and surroundings. Copies of the rules are filed in the Department of State, and will be distributed to parties interested.

Russian Foreign Chambers of Commerce.—The Journal of St. Petersburg of June 5 announces the establishment of a Russian Chamber of Commerce at Alexandria, Egypt, which is to aid in furthering trade between Russia and Egypt. Every person living in Egypt engaged in trade between Russia and Egypt is eligible to membership, and all the usual advantages and opportunities offered by such bodies are at their command.

Agricultural Machines in Russia.—According to the St. Petersburg Times, the demand for agricultural machines in the Siberian country beyond Lake Baikal is to be very large. New houses are opening up for business and the old firms are enlarging their plants. Farmers are having their orders filled as fast as the machines can be put together, and the demand is constantly increasing.

Industrial Activity in the Argentine Republic.—In the Board of Trade Journal of July 9, 1903, appears a report from Rosario, Argentina, indicating increased industrial activity and calling attention to the formation of various companies for the erection of artificial-ice-making factories and for the change from horse power on railways to electricity. All over Argentina active efforts along industrial lines are being noted.

The Official Bulletin of Argentina publishes a presidential decree authorizing the acquirement in Europe, through the Argentine legation in London, of machinery for the waterworks of the city of Corrientes and to contract with the manufacturers therefor. The same Bulletin publishes another decree that approves plans for waterworks in the city of Santa Fé. The works are to cost $1,364,055. The decree authorizes the directorate of the city to call for bids for the erection of the works by contract. It further authorizes Argentina's legation in London to obtain in Europe the necessary machinery for the two pump houses and permits the directorate to build the same at a cost of $127,422, without calling for tenders.

Meat Exports of New Zealand in 1902.—The New Zealand Trade Review publishes the following figures covering the meat exports of 1902, with a table for comparison with 1901:

Description.	1902.		1901.	
Beef:				
Fresh	£56	$273	£165	$803
Frozen	370,691	1,803,967	258,951	1,260,185
Salted	9,708	47,243	8,463	41,185
Lambs, frozen	898,534	4,372,715	781,831	3,804,781
Mutton, frozen	1,183,072	5,757,419	1,027,679	5,001,200
Sheep	109,030	530,594	48,410	235,587
Pork:				
Frozen	9,729	47,346	6,535	31,803
Salted	129	628	1,762	8,574
Poultry, frozen	8,101	39,424	419	2,039
Veal, frozen	1,682	8,185	173	842
Other meat	8,318	40,478	1,881	9,153
Rabbits, frozen	116,996	569,361	114,552	557,467
Hares, frozen	1,888	9,187	3,261	15,870
Prepared and preserved meat	123,633	601,660	87,706	426,821
Meat extracts	17,951	87,358	847	4,122
Total, including notions not named	2,870,792	13,967,709	2,352,723	11,449,526

Trade Notes from Turkey.—The British vice-consul at Van states in a recent report, published in the Board of Trade Journal, London, that in the following classes of goods British products might compete favorably with those at present introduced, viz, cutlery, agricultural implements, carpenters' tools, waterproofs and goloshes, cheap bicycles, and all sorts of fancy goods. The dressed leather of Austro-Hungarian or German origin which is now on the market is stated to be of very inferior quality and the subject of constant complaints.

The British vice-consul at Diarbekir reports that printed calicoes from India are being largely replaced by printed cotton flannels of German manufacture.

Exports of Antiques from Italy Forbidden.—The Official Gazette of Italy says that by a law of June 27, 1903, the exportation of antiquities found in excavations and that have an archæological and artistic value—also articles of antiquity of artistic value in the possession of private parties, regarded by the Government as having great value for historical and artistic purposes—is forbidden. The law is to be in force for two years. The Government reserves to itself the right to buy the articles during the two years. The law applies to antiquities and art works for which applications for permission to export have been made since June 26, 1903.

Waterworks for Damascus.—According to a French consular report, the governor-general of Syria is seeking bids for a new waterworks of cast-iron pipes for Damascus. He has appointed a commission to find ways and means of carrying out the enterprise. It is proposed to lead the water from the Barada River through five open canals. This will involve danger from dirt. It is proposed to dam up the waters about 14 or 15 miles away. The cast-iron conduit pipes are to be about 25 centimeters (9.8 inches) in diameter; the distribution pipes, about 3 centimeters (1.18 inches). Parties interested may write to the governor of Syria, Damascus.

India's Wheat Harvest in 1902-3.—According to tables furnished in the Final Memorandum of India's Director of Statistics, the total number of acres growing wheat in India during the years given was:

Year.	Acres.	Yield.
		Tons.
1902-3	22,775,160	7,774,851
1901-2	23,447,089	6,063,506

The highest average yield was 961 pounds per acre, harvested in the united province of Agra-Oudh.

Deepening the Harbor of Omuta, Japan.—An English consular report in the British Board of Trade Journal says:

> The harbor of Omuta, Japan, is to be deepened by private parties so as to permit ships of deep draft to enter at all times, particularly those carrying the coal of the Great Mitsui or Wiike Company. In conceding the right to deepen, the Government stipulated for ingress and egress of other ships than those of the company, even foreign ships. The Wiike coal mines yield 1,000,000 tons per year; but the coal being carried in lighters, the extra cost involved is estimated at $285,600 a year. To avoid this extra expense is the object of deepening the harbor.

Concession to Extract Monazite Sand in Brazil.—The Board of Trade Journal, London, says:

> Referring to the announcement on page 588 of the Board of Trade Journal of June 25 last, notifying a call for tenders for the concession to extract monazite sand on the foreshore of the State of Espirito Santo, the Board of Trade are now in receipt, through the Foreign Office, of a copy of a dispatch from the British minister at Rio de Janeiro, inclosing a copy of the call for tenders as published in the Diario Official, together with precise translation of same.

Sale of American Furniture in South Africa.—An article in the Handels-Museum of June 25 calls attention to the opportunities offered for the sale of building material and furniture in Johannesburg, Transvaal, South Africa. The article emphasizes the demand for furniture and points out the popularity of American furniture, office supplies, etc., attributing the same to the fact that the articles furnished are suited to the tastes of the people.

Chinese Chamber of Commerce.—The North China Herald of May 21 announces the establishment at Hang-Chow of an office of commerce—a kind of board of trade and agriculture. It is composed of the leading natives, and has for its object the development of China's resources and the extension of its internal and foreign trade.

Cotton Yarns in Syria.—The German consul at Damascus reports large imports of cotton yarns to Syria. The numbers run from 16 to 24 English. England supplies by far the largest part of the importations.

Camphor Forest in Formosa.—A camphor forest of 50,000 acres, containing fully 120,000 trees, has been found on the island of Formosa.

Demand for Codfish in Spain.—According to the Board of Trade Journal, published at London, the British consul at Malaga reports that the demand for codfish this season has been active, helped by moderate prices; but the importation of the article has fallen off considerably, compared with past seasons. The Newfoundland shippers appear to be paying less attention to shipments. The British vice-consul at Carthagena strongly recommends shippers to be careful in selection of fish sent to Carthagena, so as to avoid grounds for claims being made which are not infrequently disproportionate to faults committed in shipment.

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Vol. LXXIII. No. 277.

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HARVARD COLLEGE
OCT 9 1903

OCTOBER, 1903.

COMMERCE, MANUFACTURES, ETC.

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LIST OF PUBLICATIONS.

On July 1, 1903, the Bureau of Foreign Commerce of the Department of State, which has had charge of the publication and distribution of the CONSULAR REPORTS, was transferred to the Department of Commerce and Labor, in pursuance of provisions in the act of Congress approved February 14, 1903, creating that Department, and consolidated with the Bureau of Statistics, transferred from the Treasury to the new Department. Reports from consular officers on commercial and industrial subjects will hereafter be transmitted through the Department of State to the Department of Commerce and Labor, and the latter will publish and distribute them.

Requests for consular reports should hereafter be made to the Department of Commerce and Labor.

The publications formerly issued by the Bureau of Foreign Commerce will be issued in similar form by the Department of Commerce and Labor. They are as follows:

I.—COMMERCIAL RELATIONS, being the annual reports of consular officers on the commerce, industries, navigation, etc., of their districts.

II.—REVIEW OF WORLD'S COMMERCE, being a summary of the annual reports contained in Commercial Relations.

III.—CONSULAR REPORTS, issued monthly, and containing miscellaneous reports from diplomatic and consular officers.

IV.—DAILY CONSULAR REPORTS, issued daily, except Sundays and legal holidays, for the convenience of the newspaper press, commercial and manufacturing organizations, etc.

V.—EXPORTS DECLARED FOR THE UNITED STATES, issued annually, containing the declared values of exports from the various consular districts to the United States.

VI.—SPECIAL CONSULAR REPORTS, containing series of reports from consular officers on particular subjects, made in pursuance to instructions from the Department.

Following are the special publications issued prior to 1890:

Labor in Europe, 1878, one volume; Labor in Foreign Countries, 1884, three volumes; Commerce of the World and the Share of the United States Therein, 1879; Commerce of the World and the Share of the United States Therein, 1880–81; Declared Exports for the United States, First and Second Quarters, 1883; Declared Exports for the United States, Third and Fourth Quarters, 1883; Cholera in Europe in 1884, 1885; Trade Guilds of Europe, 1885; The Licorice Plant, 1885; Forestry in Europe, 1887; Emigration and Immigration, 1885-86 (a portion of this work was published as CONSULAR REPORTS No. 76, for the month of April, 1887); Rice Pounding in Europe, 1887; Sugar of Milk, 1887; Wool Scouring in Belgium, 1887; Cattle and Dairy Farming in Foreign Countries, 1888 (issued first in one volume, afterwards in two volumes); Technical Education in Europe, 1888; Tariffs of Central America and the British West Indies, 1890.

The editions of all the above-named publications are exhausted, and the Department is therefore unable to supply copies.

Beginning with 1890, reports on special subjects were published in separate form, entitled SPECIAL CONSULAR REPORTS. There are now the following SPECIAL CONSULAR REPORTS:

Vol. 1 (1890).—Cotton Textiles in Foreign Countries, Files in Spanish America, Carpet Manufacture in Foreign Countries, Malt and Beer in Spanish America, and Fruit Culture in Foreign Countries.

Vol. 2 (1890 and 1891).—Refrigerators and Food Preservation in Foreign Countries, European Emigration, Olive Culture in the Alpes Maritimes, and Beet-Sugar Industry and Flax Cultivation in Foreign Countries.

Vol. 3 (1891).—Streets and Highways in Foreign Countries. (New edition, 1897.)

Vol. 4 (1891).—Port Regulations in Foreign Countries.

Vol. 5 (1891).—Canals and Irrigation in Foreign Countries. (New edition, 1898.)

Vol. 6 (1891 and 1892).—Coal and Coal Consumption in Spanish America, Gas in Foreign Countries, and India Rubber.

Vol. 7 (1892).—The Stave Trade in Foreign Countries and Tariffs of Foreign Countries.

Vol. 8 (1892).—Fire and Building Regulations in Foreign Countries.

Vol. 9 (1892 and 1893).—Australian Sheep and Wool and Vagrancy and Public Charities in Foreign Countries.

Vol. 10 (1894).—Lead and Zinc Mining in Foreign Countries and Extension of Markets for American Flour. (New edition, 1897.)

Vol. 11 (1894).—American Lumber in Foreign Markets. (New edition, 1897.)

Vol. 12 (1895).—Highways of Commerce. (New edition, 1899.)

Vol. 13 (1896 and 1897).—Money and Prices in Foreign Countries.

Vol. 14 (1898).—The Drug Trade in Foreign Countries.

Vol. 15 (1898).—Part I. Soap Trade in Foreign Countries; Screws, Nuts, and Bolts in Foreign Countries; Argols in Europe, Rabbits and Rabbit Furs in Europe, and Cultivation of Ramie in Foreign Countries. Part II. Sericulture and Silk Reeling and Cultivation of the English Walnut.

Vol. 16 (1899).—Tariffs of Foreign Countries. Part I. Europe. Part II. America. Part III. Asia, Africa, Australasia, and Polynesia. Supplement (1900). Tariffs of Chile and Nicaragua.

Vol. 17 (1899).—Disposal of Sewage and Garbage in Foreign Countries; Foreign Trade in Coal Tar and By-Products.

Vol. 18 (1900).—Merchant Marine of Foreign Countries.

Vol. 19 (1900).—Paper in Foreign Countries; Uses of Wood Pulp.

Vol. 20 (1900).—Part I. Book Cloth in Foreign Countries, Market for Ready-Made Clothing in Latin America, Foreign Imports of American Tobacco, and Cigar and Cigarette Industry in Latin America. Part II. School Gardens in Europe. Part III. The Stave Trade in Foreign Countries.

Vol. 21 (1900).—Part I. Foreign Markets for American Coal. Part II. Vehicle Industry in Europe. Part III. Trusts and Trade Combinations in Europe.

Vol. 22 (1900 and 1901).—Part I. Acetic Acid in Foreign Countries. Part II. Mineral-Water Industry. Part III. Foreign Trade in Heating and Cooking Stoves.

Vol. 23 (1901).—Part I. Gas and Oil Engines in Foreign Countries. Part II. Silver and Plated Ware in Foreign Countries.

Vol. 24 (1902).—Creameries in Foreign Countries.

Vol. 25 (1902).—Stored Goods as Collateral for Loans.

Vol. 26 (1903).—Briquettes as Fuel in Foreign Countries.

Of these SPECIAL CONSULAR REPORTS, Australian Sheep and Wool, Carpet Manufacture, Cotton Textiles in Foreign Countries, Files in Spanish America, Fire and Building Regulations, Fruit Culture, Gas in Foreign Countries, Heating and Cooking Stoves, India Rubber, Lead and Zinc Mining, Malt and Beer in Spanish America, Money and Prices, Paper in Foreign Countries, Port Regulations, Refrigerators and Food Preservation; Sericulture, etc.; Silver and Plated Ware; Vagrancy, etc., are exhausted, and no copies can be supplied by the Department.

Of the monthly CONSULAR REPORTS, many numbers are exhausted or so reduced that the Department is unable to accede to requests for copies. Of the publications available for distribution, copies are mailed to applicants without charge.

Persons receiving CONSULAR REPORTS regularly, who change their addresses, should give the old as well as the new address.

VALUES OF FOREIGN COINS AND CURRENCIES.

The following statements show the valuation of foreign coins, as given by the Director of the United States Mint and published by the Secretary of the Treasury, in compliance with the first section of the act of March 3, 1873, viz: "That the value of foreign coins, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," and that "the value of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the 1st day of January by the Secretary of the Treasury."

In compliance with the foregoing provisions of law, annual statements were issued by the Treasury Department, beginning with that issued on January 1, 1874, and ending with that issued on January 1, 1890. Since that date, in compliance with the act of October 1, 1890, these valuation statements have been issued quarterly, beginning with the statement issued on January 1, 1891.

The fact that the market exchange value of foreign coins differs in many instances from that given by the United States Treasury has been repeatedly called to the attention of the Bureau of Foreign Commerce. An explanation of the basis of the quarterly valuations was asked from the United States Director of the Mint, and under date of February 7, 1898, Mr. R. E. Preston made the following statement:

"When a country has the single gold standard, the value of its standard coins is estimated to be that of the number of grains fine of gold in them, 480 grains being reckoned equivalent to $20.67 in United States gold, and a smaller number of grains in proportion. When a country has the double standard, but keeps its full legal-tender silver coins at par with gold, the coins of both gold and silver are calculated on the basis of the gold value.

"The value of the standard coins of countries with the single silver standard is calculated to be that of the average market value of the pure metal they contained during the three months preceding the date of the proclamation of their value in United States gold by the Secretary of the Treasury. The value of the gold coins of silver-standard countries is calculated at that of the pure gold they contain, just as if they had the single gold standard.

"These valuations are used in estimating the values of all foreign merchandise exported to the United States."

The following statements, running from January 1, 1874, to April 1, 1903, have been prepared to assist in computing the values in American money of the trade, prices, values, wages, etc., of and in foreign countries, as given in consular and other reports. The series of years are given so that computations may be made for each year in the proper money values of such year. In hurried computations, the reductions of foreign currencies into American currency, no matter for how many years, are too often made on the bases of latest valuations. All computations of values, trade, wages, prices, etc., of and in the "fluctuating-currency countries" should be made in the values of their currencies in each year up to and including 1898, and in the quarterly valuations thereafter.

To meet typographical requirements, the quotations for the years 1875–1877, 1879–1882, 1884–1887, 1895, 1897, and 1899 are omitted, these years being selected as showing the least fluctuations when compared with years immediately preceding and following.

To save unnecessary repetition, the estimates of valuations are divided into three classes, viz: (A) countries with fixed currencies, (B) countries with fluctuating currencies, and (C) quarterly valuations of fluctuating currencies.

A.—*Countries with fixed currencies.*

The following official (United States Treasury) valuations of foreign coins do not include "rates of exchange."

Countries.	Standard.	Monetary unit.	Value in U.S. gold.	Coins.
Argentine Republic	Gold and silver	Peso	$0.96,5	Gold—argentine ($4.82,4) and ½ argentine; silver—peso and divisions.
Austria-Hungary*	Gold	Crown	.20,3	Gold—20 crowns ($4.05,2) and 10 crowns.
Belgium	Gold and silver	Franc	.19,3	Gold—10 and 20 franc pieces; silver—5 francs.
Brazil	Gold	Milreis	.54,6	Gold—5, 10, and 20 milreis; silver—½, 1, and 2 milreis.
British North America (except Newfoundland).	do	Dollar	1.00	
British Honduras	do	do	1.00	
Chile	do	Peso	.36,5	Gold—escudo ($1.25), doubloon ($3.65), and condor ($7.30); silver—peso and divisions.
Costa Rica	do	Colon	.46,5	Gold—2, 5, 10, and 20 colons; silver—5, 10, 25, and 50 centisimos.
Cuba	Gold and silver	Peso	.92,6	Gold—doubloon ($5.01,7); silver—peso (60 cents).
Denmark	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Ecuador †	do	Sucre	.48,7	Gold—10 sucres ($4.8665); silver—sucre and divisions.
Egypt	do	Pound (100 piasters).	4.94,3	Gold—10, 20, 50, and 100 piasters; silver—1, 2, 10, and 20 piasters.
Finland	do	Mark	.19,3	Gold—10 and 20 marks ($1.93 and $3.85,9).
France	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany	Gold	Mark	.23,8	Gold—5, 10, and 20 marks.
Great Britain	do	Pound sterling	4.86,6½	Gold—sovereign (pound sterling) and half sovereign.
Greece	Gold and silver	Drachma	.19,3	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti	do	Gourde	.96,5	Silver—gourde.
India ‡	Gold	Rupee	.32,4	Gold—sovereign ($4.8665); silver—rupee and divisions.
Italy	Gold and silver	Lira	.19,3	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Japan §	Gold	Yen	.49,8	Gold—1, 2, 5, 10, and 20 yen.
Liberia	do	Dollar	1.00	
Netherlands	Gold and silver	Florin	.40,2	Gold—10 florins; silver—½, 1, and 2½ florins.
Newfoundland	Gold	Dollar	1.01,4	Gold—$2 ($2.02,7).
Peru ‖	do	Sol	.48,7	Gold—libra ($4.8665); silver—sol and divisions.
Portugal	do	Milreis	1.08	Gold—1, 2, 5, and 10 milreis.
Russia ¶	do	Ruble	.51,5	Gold—imperial ($7.718) and ½ imperial ($3.80); silver—¼, ½, and 1 ruble.
Spain	Gold and silver	Peseta	.19,3	Gold—25 pesetas; silver—5 pesetas.
Sweden and Norway	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Switzerland	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey	Gold	Piaster	.04,4	Gold—25, 50, 100, 200, and 500 piasters.
Uruguay	do	Peso	1.03,4	Gold—peso; silver—peso and divisions.
Venezuela	Gold and silver	Bolivar	.19,3	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

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* The gold standard went into effect January 1, 1900 (see Commercial Relations, 1899, Vol. II, p. 7). Values are still sometimes expressed in the florin, which is worth 2 crowns.

† Gold standard adopted in November, 1900. (See CONSULAR REPORTS No. 225, June, 1899.)

‡ For an account of the adoption of the gold standard, see CONSULAR REPORTS No. 238, p. 359.

§ Gold standard adopted October 1, 1897. (See CONSULAR REPORTS No. 201, p. 259.)

‖ Gold standard adopted October 13, 1900.

¶ For an account of the adoption of the gold standard, see Review of the World's Commerce, 1896–97, p. 254.

B.—*Countries with fluctuating currencies, 1874–1898.*

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1874.	1878.	1883.	1888.	1889.	1890.
Austria-Hungary[*].	Silver	Florin	$0.47,6	$0.45,3	$0.40,1	$0.34,5	$0.33,6	$0.42
Bolivia	do	Dollar until 1880; boliviano thereafter.	.96,5	.96,5	.81,2	.69,9	.68	.85
Central America	do	Peso	.96,5	.91,8	....	.69,9	.68	.85
China	do	Haikwan tael	1.61	....	....	....	....	....
Colombia	do	Peso	.96,5	.96,5	.81,2	.69,9	.68	.85
Ecuador	do	do	.96,5	.91,8	.81,2	.69,9	.68	.85
Egypt[†]	Gold	Pound (100 piasters)	....	4.97,4	4.90	4.94,3	....	....
India	Silver	Rupee	.45,8	.43,6	.38,6	.32,2	.32,3	.40,4
Japan	Gold	Yen	.99,7	.99,7	....	.99,7	.99,7	.99,7
	Silver		....	....	.87,6	.75,3	.73,4	.91,7
Mexico	do	Dollar	1.04,75	.99,8	.88,2	.75,9	.73,9	.92,3
Netherlands[‡]	Gold and silver.	Florin	.40,5	.38,5	....	....	....	....
Peru	Silver	Sol	.92,5	.91,8	.81,2	.69,9	.68	.85
Russia	do	Ruble	.77,17	.73,4	.65	.55,9	.54,4	.68
Tripoli	do	Mahbub of 20 piasters.	.87,09	.82,9	.73,3	.63	.61,4	.76,7

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1891.	1892.	1893.	1894.	1896.	1898.
Austria-Hungary[*].	Silver	Florin	$0.38,1	$0.34,1	....	....	....	....
Bolivia	do	Boliviano	.77,1	.69,1	$0.61,3	$0.51,6	$0.49,1	$0.42,4
Central America	do	Peso	.77,1	.69,1	.61,3	.51,6	.49,1	.41,4
Colombia	do	do	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
Ecuador	do	do	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
India	do	Rupee	.36,6	.32,8	.29,2	.24,5	.23,3	.20,1
Japan[§]	do	Yen	.83,1	.74,5	.66,1	.55,6	.52,9	....
Mexico	do	Dollar	.83,7	.75	.66,6	.56	.53,3	.46
Peru	do	Sol	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
Russia[§]	do	Ruble	.61,7	.55,3	.49,1	.41,3	.39,3	....
Tripoli	do	Mahbub of 20 piasters.	.69,5	.62,3	.55,3	.46,5	.44,3	....

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[*] See footnote to Austria-Hungary under Table A.

[†] The Egyptian pound became fixed in value at $4.94,3 in 1887.

[‡] The Netherlands florin fluctuated up to the year 1880, when it became fixed at 40.2 cents.

[§] See footnote, table of fixed currencies.

C.—*Quarterly valuations of fluctuating currencies.*

Countries.	Monetary unit.	1900.				1901.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia	Silver boliviano	$0.42,7	$0.43,6	$0.43,8	$0.45,1	$0.46,8	$0.45,1	$0.43,6	$0.42,8
Central America.	Silver peso	.42,7	.43,6	.43,8	.45,1	.46,5	.45,1	.43,6	.42,8
China	Amoy tael	.69,1	.70,5	.70,9	.72,9	.75,7	.72,9	.70,5	.69,1
	Canton tael	.68,9	.70,3	.70,7	.72,7	.75,5	.72,7	.70,3	.68,9
	Chefoo tael	.66,1	.67,4	.67,8	.69,7	.72,4	.69,7	.67,4	.66,1
	Chinkiang tael	.67,5	.68,8	.69,3	.71,2	.74	.71,2	.68,8	.67,5
	Fuchau tael	.64	.65,2	.65,6	.67,4	.70,1	.67,5	.65,2	.64
	Haikwan tael	.70,3	.71,7	.72,1	.74,2	.77,1	.74,2	.71,7	.70,4
	Hankau tael	.64,7	.65,9	.66,3	.68,2	.70,9	.68,2	.65,9	.64,7
	Hongkong tael	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)
	Ningpo tael	.66,5	.67,7	.68,2	.70,1	.72,8	.70,1	.67,8	.66,5
	Niuchwang tael	.64,8	.66,1	.66,5	.68,4	.71	.68,4	.66,1	.64,8
	Shanghai tael	.63,1	.64,4	.64,8	.66,6	.69,2	.66,6	.64,4	.63,2
	Swatow tael	.63,9	.65,1	.65,5	.67,4	.70	.67,4	.65,1	.63,9
	Takao tael	.69,6	.70,9	.71,4	.73,4	.76,2	.73,4	.70,9	.69,6
	Tientsin tael	.67	.68,3	.68,7	.70,7	.73,4	.70,7	.68,3	.67
Colombia	Silver peso	.42,7	.43,6	.43,8	.45,1	.46,8	.45,1	.43,6	.42,8
Ecuador †	do								
India	Silver rupee‡	.20,3	.20,7	.20,8					
Mexico	Silver dollar	.46,4	.47,3	.47,6	.49	.50,9	.49	.49	.46,4
Persia	Silver kran	.07,9	.08	.08,1	.08,3	.08,6	.08,3	.08,3	.07,9
Peru †	Silver sol	.42,7	.43,6	.43,8	.48,7				

Countries.	Monetary unit.	1902.				1903.		
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.
Bolivia	Silver boliviano	$0.41,3	$0.40,3	$0.38,2	$0.38,4	$0.36,1	$0.35,2	$0.38,4
Central America	Silver peso	.41,3	.40,3	.38,2	.38,4	.36,1	.35,2	.38,4
China	Amoy tael	.66,9	.65,1	.61,8	.62	.58,4	.57	.62,2
	Canton tael	.66,7	.64,9	.61,7	.61,9	.58,2	.56,8	.62
	Chefoo tael	.63,9	.62,3	.59,1	.59,3	.55,8	.54,5	.59,5
	Chinkiang tael	.65,3	.63,6	.60,4	.60,6	.57	.55,7	.60,7
	Fuchau tael	.61,8	.60,2	.57,2	.57,4	.54	.52,7	.57,5
	Haikwan tael	.68	.66,3	.62,9	.63,1	.59,4	.58	.63,3
	Hankau tael	.62,6	.60,9	.57,9	.58	.54,6	.53,3	.58,2
	Hongkong tael	(*)	(*)	(*)	(*)	(*)	(*)	(*)
	Ningpo tael	.64,3	.62,6	.59,5	.59,6	.56,1	.54,8	.58,3
	Niuchwang tael	.62,7	.61,1	.58	.58,2	.53,3	.53,4	.59,8
	Shanghai tael	.61,1	.59,5	.56,5	.56,7	.53,9	.52	.56,8
	Swatow tael	.61,8	.60,2	.57,1	.57,3	.58,8	.52,6	.57,5
	Takao tael	.67,3	.65,5	.62,2	.62,4	.56,6	.57,3	.62,6
	Tientsin tael	.64,8	.63,1	.59,9	.60,1	.60,1	.55,2	.60,3
Colombia	Silver peso	.41,3	.40,3	.38,2	.38,4	.36,1	.35,2	.38,4
Mexico	Silver dollar	.44,9	.43,7	.41,5	.41,7	.39,2	.38,3	.41,8
Persia	Silver kran	.07,6	.07,4	.07	.07,1	.06,6	.06,5	.07,1

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* The "British dollar" has the same legal value as the Mexican dollar in Hongkong, the Straits Settlements, and Labuan.

† See footnote, table of fixed currencies.

‡ The sovereign is the standard coin of India, but the rupee is the money of account. See also table of fixed currencies.

FOREIGN WEIGHTS AND MEASURES.

The following table embraces only such weights and measures as are given from time to time in CONSULAR REPORTS and in Commercial Relations:

Foreign weights and measures, with American equivalents.

Denominations.	Where used.	American equivalents.
Almude	Portugal	4.422 gallons.
Ardeb	Egypt	7.6907 bushels.
Are	Metric	0.02471 acre.
Arobe	Paraguay	25 pounds.
Arratel or libra	Portugal	1.011 pounds.
Arroba (dry)	Argentine Republic	25.3175 pounds.
Do	Brazil	32.38 pounds.
Do	Cuba	25.3664 pounds.
Do	Portugal	32.38 pounds.
Do	Spain	25.36 pounds.
Do	Venezuela	25.4024 pounds.
Arroba (liquid)	Cuba, Spain, and Venezuela	4.263 gallons.
Arshine	Russia	28 inches.
Arshine (square)	do	5.44 square feet.
Artel	Morocco	1.12 pounds.
Baril	Argentine Republic and Mexico	20.0787 gallons.
Barrel	Malta (customs)	11.4 gallons.
Do	Spain (raisins)	100 pounds.
Batman or tabriz	Persia	6.49 pounds.
Berkovets	Russia	361.12 pounds.
Bongkal	India	832 grains.
Bouw	Sumatra	7,096.5 square meters.
Bu	Japan	0.1 inch.
Butt (wine)	Spain	140 gallons.
Caffiso	Malta	5.4 gallons.
Candy	India (Bombay)	529 pounds.
Do	India (Madras)	500 pounds.
Cantar	Morocco	113 pounds.
Do	Syria (Damascus)	575 pounds.
Do	Turkey	124.7036 pounds.
Cantaro (cantar)	Malta	175 pounds.
Carga	Mexico and Salvador	300 pounds.
Catty	China	1.333⅓ (1⅓) pounds.
Do*	Japan	1.31 pounds.
Do	Java, Siam, and Malacca	1.35 pounds.
Do	Sumatra	2.12 pounds.
Centaro	Central America	4.2631 gallons.
Centner	Bremen and Brunswick	117.5 pounds.
Do	Darmstadt	110.24 pounds.
Do	Denmark and Norway	110.11 pounds.
Do	Nuremberg	112.43 pounds.
Do	Prussia	113.44 pounds.
Do	Sweden	93.7 pounds.
Do	Vienna	123.5 pounds.
Do	Zollverein	110.24 pounds.
Do	Double or metric	220.46 pounds.
Chetvert	Russia	5.7748 bushels.
Chih	China	14 inches.

*More frequently called "kin." Among merchants in the treaty ports it equals 1.33⅓ pounds avoirdupois.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Coyan	Sarawak	3,098 pounds.
Do	Siam (Koyan)	2,667 pounds.
Cuadra	Argentine Republic	4.2 acres.
Do	Paraguay	78.9 yards.
Do	Paraguay (square)	8.077 square feet.
Do	Uruguay	Nearly 2 acres.
Cubic meter	Metric	35.3 cubic feet.
Cwt. (hundredweight)	British	112 pounds.
Dessiatine	Russia	2.6997 acres.
Do	Spain	1.599 bushels.
Drachme	Greece	Half ounce.
Egyptian weights and measures	(*See* CONSULAR REPORTS No. 144.)	
Fanega (dry)	Central America	1.5745 bushels.
Do	Chile	2.575 bushels.
Do	Cuba	1.599 bushels.
Do	Mexico	1.54728 bushels.
Do	Morocco	Strike fanega, 70 pounds; full fanega, 118 pounds.
Do	Uruguay (double)	7.776 bushels.
Do	Uruguay (single)	3.888 bushels.
Do	Venezuela	1.599 bushels.
Fanega (liquid)	Spain	16 gallons.
Feddan	Egypt	1.03 acres.
Frail (raisins)	Spain	50 pounds.
Frasco	Argentine Republic	2.5096 quarts.
Do	Mexico	2.5 quarts.
Frasila	Zanzibar	35 pounds.
Fuder	Luxemburg	264.17 gallons.
Funt	Russia	0.9028 pound.
Garnice	Russian Poland	0.88 gallon.
Gram	Metric	15.432 grains.
Hectare	do	2.471 acres.
Hectoliter:		
Dry	do	2.838 bushels.
Liquid	do	26.417 gallons.
Joch	Austria-Hungary	1.422 acres.
Ken	Japan	6 feet.
Kilogram (kilo)	Metric	2.2046 pounds.
Kilometer	do	0.621376 mile.
Klafter	Russia	216 cubic feet.
Koku	Japan	4.9629 bushels.
Korree	Russia	3.5 bushels.
Kwan	Japan	8.28 pounds.
Last	Belgium and Holland	85.134 bushels.
Do	England (dry malt)	82.52 bushels.
Do	Germany	2 metric tons (4,480 pounds).
Do	Prussia	112.29 bushels.
Do	Russian Poland	113⅜ bushels.
Do	Spain (salt)	4,760 pounds.
League (land)	Paraguay	4,033 acres.
Li	China	2,115 feet.
Libra (pound)	Argentine Republic	1.0127 pounds.
Do	Central America	1.043 pounds.
Do	Chile	1.014 pounds.
Do	Cuba	1.0161 pounds.
Do	Mexico	1.01465 pounds.
Do	Peru	1.0143 pounds.
Do	Portugal	1.011 pounds.
Do	Spain	1.0144 pounds.
Do	Uruguay	1.0143 pounds.
Do	Venezuela	1.0161 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Liter	Metric	1.0567 quarts.
Livre (pound)	Greece	1.1 pounds.
Do	Guiana	1.0791 pounds.
Load	England (timber)	Square, 50 cubic feet; unhewn, 40 cubic feet; inch planks, 600 superficial feet.
Manzana	Costa Rica	1½ acres.
Do	Nicaragua and Salvador	1.727 acres.
Marc	Bolivia	0.507 pound.
Maund	India	82 2/7 pounds.
Meter	Metric	39.37 inches.
Mil	Denmark	4.68 miles.
Do	Denmark (geographical)	4.61 miles.
Milla	Nicaragua and Honduras	1.1493 miles.
Morgen	Prussia	0.63 acre.
Oke	Egypt	2.7225 pounds.
Do	Greece	2.84 pounds.
Do	Hungary	3.0817 pounds.
Do	Turkey	2.82838 pounds.
Do	Hungary and Wallachia	2.5 pints.
Pic	Egypt	21¼ inches.
Picul	Borneo and Celebes	135.64 pounds.
Do	China, Japan, and Sumatra	133⅓ pounds
Do	Java	135.1 pounds.
Do	Philippine Islands.	137.9 pounds.
Pie	Argentine Republic	0.9478 foot.
Do	Spain	0.91407 foot.
Pik	Turkey	27.9 inches.
Pood	Russia	36.112 pounds.
Pund (pound)	Denmark and Sweden	1.102 pounds.
Quarter	Great Britain	8.252 bushels.
Do	London (coal)	36 bushels.
Quintal	Argentine Republic	101.42 pounds.
Do	Brazil	130.06 pounds.
Do	Castile,* Chile, Mexico, and Peru	101.41 pounds.
Do	Greece	123.2 pounds.
Do	Newfoundland (fish)	112 pounds.
Do	Paraguay	100 pounds.
Do	Syria	125 pounds.
Do	Metric	220.46 pounds.
Rottle	Palestine	6 pounds.
Do	Syria	5¾ pounds.
Sagene	Russia	7 feet.
Salm	Malta	490 pounds.
Se	Japan	0.02451 acres.
Seer	India	1 pound 13 ounces.
Shaku	Japan	11.9305 inches.
Sho	do	1.6 quarts.
Standard (St. Petersburg)	Lumber measure	165 cubic feet.
Stone	British	14 pounds.
Suerte	Uruguay	2,700 cuadras (see cuadra).
Sun	Japan	1.193 inches.
Tael	Cochin China	590.75 grains (troy).
Tan	Japan	0.25 acre.
To	do	2 pecks.
Ton	Space measure	40 cubic feet.
Tonde (cereals)	Denmark	3.94783 bushels.
Tondeland	do	1.36 acres.

*Although the metric weights are used officially in Spain, the Castile quintal is employed in commerce in the Peninsula and colonies, save in Catalonia; the Catalan quintal equals 91.71 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Tsubo	Japan	6 feet square.
Tsun	China	1.41 inches.
Tunna	Sweden	4.5 bushels.
Tunnland	Sweden	1.22 acres.
Vara	Argentine Republic	34.1208 inches.
Do	Central America	32.87 inches.
Do	Chile and Peru	33.367 inches.
Do	Cuba	33.384 inches.
Do	Curaçao	33.375 inches.
Do	Mexico	33 inches.
Do	Paraguay	34 inches.
Do	Spain	0.914117 yard.
Do	Venezuela	33.384 inches.
Vedro	Russia	2.707 gallons.
Vergees	Isle of Jersey	71.1 square rods.
Verst	Russia	0.663 mile.
Vlocka	Russian Poland	41.98 acres.

METRIC WEIGHTS AND MEASURES.

Metric weights.

Milligram ($\frac{1}{1000}$ gram) equals 0.0154 grain.
Centigram ($\frac{1}{100}$ gram) equals 0.1543 grain.
Decigram ($\frac{1}{10}$ gram) equals 1.5432 grains.
Gram equals 15.432 grains.
Decagram (10 grams) equals 0.3527 ounce.
Hectogram (100 grams) equals 3.5274 ounces.
Kilogram (1,000 grams) equals 2.2046 pounds.
Myriagram (10,000 grams) equals 22.046 pounds.
Quintal (100,000 grams) equals 220.46 pounds.
Millier or tonnea—ton (1,000,000 grams) equals 2,204.6 pounds.

Metric dry measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.061 cubic inch.
Centiliter ($\frac{1}{100}$ liter) equals 0.6102 cubic inch.
Deciliter ($\frac{1}{10}$ liter) equals 6.1022 cubic inches.
Liter equals 0.908 quart.
Decaliter (10 liters) equals 9.08 quarts.
Hectoliter (100 liters) equals 2.838 bushels.
Kiloliter (1,000 liters) equals 1.308 cubic yards.

Metric liquid measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.0388 fluid ounce.
Centiliter ($\frac{1}{100}$ liter) equals 0.338 fluid ounce.
Deciliter ($\frac{1}{10}$ liter) equals 0.845 gill.
Liter equals 1.0567 quarts.
Decaliter (10 liters) equals 2.6418 gallons.
Hectoliter (100 liters) equals 26.417 gallons.
Kiloliter (1,000 liters) equals 264.18 gallons.

Metric measures of length.

Millimeter ($\frac{1}{1000}$ meter) equals 0.0394 inch.
Centimeter ($\frac{1}{100}$ meter) equals 0.3937 inch.
Decimeter ($\frac{1}{10}$ meter) equals 3.937 inches.

Meter equals 39.37 inches.
Decameter (10 meters) equals 393.7 inches.
Hectometer (100 meters) equals 328 feet 1 inch.
Kilometer (1,000 meters) equals 0.62137 mile (3,280 feet 10 inches).
Myriameter (10,000 meters) equals 6.2137 miles.

Metric surface measures.

Centare (1 square meter) equals 1,550 square inches.
Are (100 square meters) equals 119.6 square yards.
Hectare (10,000 square meters) equals 2.471 acres.

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GERMAN FRUIT IMPORTS FROM THE UNITED STATES.

Another branch of American export trade to Germany which, despite all restrictive regulations in this country, begins to show the permanent effect of intelligent, well-directed effort is the traffic in fresh apples and the various dried fruits which are now produced so abundantly in the United States.

The first important movement of fresh apples from the United States to Germany occurred during the memorable season of 1896–97, when, stimulated by an enormous crop in the United States and a practical failure of that fruit in northern Europe, certain exporters, following the suggestion of consular reports, sent over whole cargoes, which for a time completely filled the principal city markets in Germany and gave the public in this country an opportunity to appreciate the superior quality of American apples, which were not only the best but the cheapest fresh fruit in the market of that year.

But the apples had been gathered and packed for the American trade, and had not been specially selected and put up for export. Large quantities were shipped abroad in bulk in the holds of vessels and had to be rehandled as loose cargo on arrival; as a consequence many were lost through decay, and importers who made large profits on early consignments lost on the later ones.

The following year brought a short apple crop in the United States and the European export declined to comparatively trifling figures. Then the trade was taken up more intelligently; apples of preferred varieties were carefully gathered, selected, and packed for the British and continental European trade, with the result that in 1900 the total export of fresh apples to Germany reached 1,760 tons. This increased in 1901 to 1,972 tons, and then in the following year, notwithstanding a fair average fruit crop in Germany, the shipments of American apples jumped to 5,835 metric tons. This branch of trade was thus not only trebled in a single year, but the American apple made its way into more general use than ever before and laid the foundation of a large and permanent future demand.

Meanwhile, the dried and preserved fruits—apples, apricots, peaches, pears, prunes, and cherries—have grown steadily in favor with each succeeding year until the import may now be almost said to be limited only by the surplus supply which American packers have to spare. Here, too, mistakes were made. Inferior products were dumped into boxes, a layer of selected pieces placed at the top and bottom, and the middle filled with low-grade material that disappointed retailers and consumers and for a time threatened to imperil the trade. Then fruit growers' associations and the better class of exporters took up the matter and reformed and improved the methods of curing, packing, and grading, so that a given mark or brand should have a definite meaning as to quality and value, with the result that in 1900 the imports to Germany of American dried fruits reached the important total of 23,258 tons. Then came the comparatively short crop and high prices of 1901, under which the exports to Germany dropped to 17,118 tons, rose to 21,645 tons in 1902, and during the first six months of 1903 have broken all records and reached the unprecedented total of 22,724 tons, against 9,599 tons during the same period of the preceding year.

So popular and widely appreciated have American dried fruits become in Germany that they may be said to now control the markets here by virtue of their superior flavor and quality, as well as by their cheapness, which brings them within the reach of a large class of people of limited means to whom preserved fruits had been until recent years a forbidden luxury. As an experienced dealer recently said in discussing that phase of the subject:

> It doesn't make so much difference now whether we have good crops of apples, apricots, plums, etc., in Europe or not. The American dried fruits fix the standard, both as to quality and price, and they will sell here to the extent that the American consumers can spare for export, no matter how great or small may be the home supply of native fruits. Your people have the sunshine, the soil, and the improved varieties, with which our growers are unable to compete.

Such is, substantially, the existing situation. Provided American packers prepare their fruits properly for export, avoiding the excessive use of sulphur and recourse to salicylates and other doubtful antiseptics—which are certain to be detected by the watchful

German inspectors and sanitary police—they will find here a ready and constant market for any probable surplus that our country may supply for many years to come.

FRANK H. MASON,
Consul-General.

BERLIN, GERMANY, *August 1, 1903.*

EXPORTS OF FRUITS AND NUTS FROM THE UNITED STATES.

[Compiled in the Bureau of Statistics, Department of Commerce and Labor.]

Description.	1896.		1898.	
	Quantity.	Value.	Quantity.	Value.
Apples:				
Dried ... pounds	26,961,963	$1,340,507	31,031,254	$1,897,725
Green or ripe ... barrels	360,002	930,289	605,390	1,684,717
Prunes ... pounds			15,940,791	1,021,888
Raisins ... do			3,109,639	167,062
All other green, ripe, or dried fruits		1,868,353		2,033,845
Fruits, preserved (canned)		1,376,281		1,624,741
All other fruits		70,353		82,504
Nuts		93,283		161,432
Total value		5,679,066		8,673,914

Description.	1900.		1902.	
	Quantity.	Value.	Quantity.	Value.
Apples:				
Dried ... pounds	34,964,010	$2,247,851	15,664,468	$1,190,593
Green or ripe ... barrels	526,636	1,444,655	459,719	1,628,886
Prunes ... pounds	25,922,371	1,646,332	23,358,849	1,404,422
Raisins ... do	2,415,456	139,689	2,323,274	149,216
All other green, ripe, or dried fruits		2,545,451		2,331,193
Fruits, preserved (canned)		3,127,278		1,195,635
All other fruits		63,448		94,323
Nuts		156,490		304,241
Total value		11,371,194		8,298,509

AMERICAN FRUIT IN EUROPE.

[Résumé of an article published in the Obstmarkt, a German magazine devoted to pomological and horticultural pursuits, translated and prepared in the Bureau of Statistics of the Department of Commerce and Labor.]

When the work of the United States consuls in 1896 increased the exports of fruit to Europe, an alarm was sounded in all the lands that had hitherto supplied Europe with fruit. Article after article appeared in the papers warning producers and consumers against the new danger—pamphlets and even books began to appear. It was pointed out in one that before the advent of the railroad and modern methods of transportation the farmers found compensation for small crops in higher prices. To-day this is impossible, for as

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soon as a crop is found to be failing in one part of the world supplies are sent in from another. Prices, therefore, are beyond the power of .the farmers or producers. If regulated at all they are regulated by the merchants or middlemen. Up to the invention and introduction of cold storage and the railroad, the fruit raiser, with his perishable commodity, was entirely dependent upon the local market; hence a very limited demand. To-day it is different. The world is his market and cold storage makes regular prices and profits possible. They may be small, but they are certain. It is another proof of the good effects and permanent value of careful organization. In 1895, when the apple crop of Germany failed, France sent her 27,662,360 pounds of fruit, principally apples, as against 1,194,160 pounds in 1894.

TRANSPORTATION.

The exportation of fruit is materially affected and sometimes hindered by the cost of transportation. If the buying price plus the cost of transportion is higher than the prices prevailing in the market to be invaded, competition is impossible. To this fact Germany is turning her attention. Her State-owned railroads have helped but little to bolster up, much less to build up, the Empire's agricultural and horticultural industries. Of course, the first consideration entering the problem of railroad building in Europe is war and a road's value from the standpoint of strategy.

Freight rates on the railroads in the United States are so very low, compared with rates in Germany, that fruit, fresh and dried, is able to find its way from the farms and factories of California not only to the Empire, but to all parts of Europe. In the book of which the foregoing and most if not all that is to follow is a résumé, the German writer characterizes the American apple as one that possesses the peculiarity of being able to be picked fully developed but only partially ripe; consequently, he says, it is able to stand transportation, even to far-off places. Besides, it ripens afterwards, thus adding the full flavor to its other excellent qualities. This leads him to say that Australia, Tasmania, and parts of the Polynesian group will be able to enter the continental European markets, for their fruits are not unlike the American. They have already entered England and are meeting with remarkable success. Great Britain, that covered her deficiencies formerly by buying in German orchards, fills all her demands now in America (the United States and Canada) and Australia. The writer quoted urges Europe, particularly Germany, to add poultry and fruit raising to its agricultural industries. He assigns as a reason for the remissness of the East Prussian farmers in fruit raising the high railroad freight rates to be paid before fruit can get to the Berlin or other big markets.

Besides urging reduced freight rates on the railroads for the transportation of fresh fruit, the writer urges a rational and scientific treatment of the whole question, from the selection of the soil to the picking and packing of the ripe fruit. Care, he says, should be taken in picking out the place for the orchard, the trees—that is, the kinds suitable to certain situations, climatic and other conditions—the use of fertilizers, the treatment of the soil, the care of the trees, the picking, putting up, drying, preserving, evaporating, etc. In other words, intensive rather than extensive fruit raising is required. Quality as well as quantity ought to be considered, and quantity as well as quality will always follow faithful, intelligent, scientific treatment of the soil and the trees. The writer claims, upon the authority of an American who spent a year or two in a German horticultural school, that neither the climate nor the soil of America is more favorable to fruit raising than are the climate and soil of Europe, particularly of the Fatherland. He quotes the American in regard to the dangers in America to fruit trees from vegetable and animal parasites, and still further to the effect that the Germans are much farther advanced in scientific knowledge and treatment of trees—so much so that competition on the part of the United States might easily be made impossible, and would be, did the Germans go in for fruit raising in wholesale rather than as now in retail quantities. He points out the advantages possessed by Europe in its cheaper labor, comparing it with that of the United States, for which American farmers have to pay as high as $30 a month, with board and lodging.

How eager many European writers are to injure American exporters is seen in a paragraph or two devoted to evaporized or "ring" apples. The Americans, says the writer already quoted, never think of using their best fruit for drying or evaporating purposes; they pick out the best fruit for table and other uses and cut up the rest. In describing American methods of packing, he says the barrels are filled up over the groove into which the top fits, so that when the top is put on the apples are pressed down. Besides, he says, a layer of paper is packed on the bottom and along the sides of each barrel. Ventilation is thus impossible, for air is excluded. This he compares with the European method of boring holes in the fruit barrels and boxes for ventilation purposes. The reasons he assigns for the American methods of packing are amusing: one is to avoid the sea water on board ships, and the second to avoid weight reduction by evaporation during transport. He urges Europeans to pack in barrels or boxes of uniform size, as do the Americans, but to be sure to bore holes in both for ventilation. He paints a doleful picture of Germany's methods of packing in all kinds of boxes, barrels, etc., and of the injury done to such fruit when transported. The finer fruits, of course, are put up and carried in boxes of uniform size, carefully packed, and always open to ventilation. Patent boxes and barrels are being built all over Europe for fruit transportation. The best are built, like the old-fashioned orange boxes, in two parts—oblong boxes with a partition in the middle to separate fruit, thus preventing pressure from too great weight when the boxes are ended up. Porous paper is recommended for wrapping the finer kinds; also excelsior, cork dust, dry leaves, charcoal, etc., for packing purposes. Everywhere in Europe, particularly in the German Empire, the horticultural unions and the big fruit raisers are seeking a way to more profitably solve the fruit-transportation problem. Whether box or barrel is best has not been determined. That the fruit should be ventilated, all are agreed. Some favor packing in excelsior, as it is cooler than paper and permits the air to enter and circulate. If Americans will learn to pack as they pack in the Tyrol—that is, in the divided ventilated boxes—the prices they get now, from $3.75 to $5 for each 110 pounds, will advance very considerably. They (the Americans) never think of using excelsior, silk, or parchment paper. They sell large quantities, but make little on them compared with what they might make. They name their apples on boxes and barrels, but never on the paper in which they are wrapped. Still, the German hausfrau has grown so familiar with American fruit, particularly apples, that the naming is no longer necessary; she can tell them at a glance.

One of the evils under which the Empire, if not a large part of Europe, suffers is the popular belief that it hardly pays to raise fruit—that only land unfit for other uses ought to be given up to orchards. This opinion has prevailed so far and long as to lead farmers and their boys to neglect the horticultural schools and classes. One community paid as much as 3,000 marks ($714) per annum for each person graduated from its classes in 1891, 1892, and 1893. It is hardly necessary to note that all this led to a change. The increased evils consequent upon the extraordinary importations of 1895–96 led to large and liberal discussion of the whole problem. The remedies that were looked for in legislation are to be found, it is hoped, in better education, and the education is being provided. Garden, agricultural, and horticultural schools and classes are being erected and opened all over the Empire.

It will never again be possible to push the American fruit, particularly apples, from the European market. They are so much superior in sap and flavor to anything, except the very choicest of France, Italy, and the Tyrol, that a market is assured; but the new schools and the new efforts will result in the spread of a very healthy form of food.

WHEN TO SELL.

The best time to sell perishable fruits in Europe is in the months or weeks that precede Christmas. During that time the housewife is busy putting up her winter's or year's supply of preserves. Of course, the apples that will not bear winter transportation ought to enter the Empire before cold weather. Were cold storage possible in the European ports, in large cities like Hamburg, Bremen, Antwerp, etc., the supply could always be kept ready to meet any demand.

THE KINDS TO SEND.

The fruits with which Europe has been made familiar in the past—*i. e.*, the fruits that first found favor and find it to-day—are the finer kinds of Baldwins, Greenings, Russets, Kings, and Pippins. The one danger which the American exporter must guard against is the sending of one kind of apple as a substitute for another. If he does, let him never depart from the rule to replace Baldwins by Greenings or Russets, Russets by Greenings or Baldwins, Greenings by Russets or Baldwins. If he follows this rule he can not fail to give satisfaction, to increase his markets, and to realize fair profits from the trade. There are cases on record where firms sent Kings or Nonesuch where Baldwins and Greenings had been ordered and lost every dollar's worth because of exposure to frost. Had the Kings and Nonesuch gone in on time, had there been no delays, the results would have been different. The American Baldwin, Greening, and Winter Russet, carefully picked, packed, and handled, will keep (although it is hard to make Europeans believe this possible) four, five, six, and even seven months. There is no market so favorable to American fruit as the markets of northern Europe. The prices, as a rule, are high. It is not unusual to see as much as 42 and 50 marks ($10 and $12) paid for a barrel of fine Baldwins or choice Greenings. There are men in Europe who are willing to pay from $5 to $10 a barrel year in and year out for those kinds—Baldwins, Greenings, and Winter Russets.

AMERICAN SHOES IN BOGOTÁ.

A boycott was declared recently by the shoemakers of Bogotá refusing to repair in any way shoes of American manufacture, having become alarmed at their cheapness and the hold they are getting on the market here. This suggested to me that a report on the shoe trade of Bogotá would be of interest to our manufacturers.

The shoe trade until now has never been an important one.

Shoes have generally been supplied by native workmen, using imported leather, as a rule, and the little foreign trade which existed was controlled by English and European houses. The United States has, however, lately put upon the market an article so low in price and so good in quality that a continued yearly increase may be expected if this class of shipments is continued.

The shoe trade may be divided into three classes—shoes used by those who consider themselves the fashionable class, by the middle class, and by the poorer class, who wear principally the native-made sandals manufactured from fiber.

The first class use almost exclusively the best Parisian shoe, such as the Clouet and Vignix makes, which have, to this extent, almost undisputed hold of the market, and will probably keep it as Bogotá society models after Paris in all things concerning style. However, the high-class American shoe is gaining favor.

It may be well to state here that the total sale of the French article is not large, as the price for both sexes is $12 per pair.

The middle class has hitherto been supplied principally by native workmen, and among the native work of this class must be mentioned a Bogotá factory, which is operated entirely by machinery and in conjunction with the principal tanneries near the city. This factory turns out a good class of work and gives promise of doing a profitable business.

Now, however, American manufacturers are supplying the town, not because they have a more attractive article than European or English houses (on the contrary, the American shapes and styles have only recently found favor, while the foreign manufacturers, in marked contrast to the American manufacturers, imitate the native styles), but solely because the United States seized the opportune moment when the introduction of a moderately priced foreign article became imperatively necessary.

On the outbreak of the war, foreign exchange rose and rendered it impossible for imported goods, paid for in gold, to compete with native-made articles. Then came scarcity and an unprecedented rise in native prices, quite out of proportion to the depreciation in paper money, and the market was again open to foreign goods. This has especially affected the shoe trade, for articles of clothing are a necessity; but, with a few unimportant exceptions, shoes are the only article of clothing for which the public have not been entirely dependent on imports.

This was the opportune moment, and when prices had reached such a point that the local tradesmen refused to work for less than $5 or $6 a pair, the market was suddenly supplied with American shoes selling for from $4 to $6.

American styles are certainly different from the French, but American goods have been forced on the market and Bogotáns are gradually coming round to a liking for the American style. It will therefore be their own fault if American manufacturers lose the market so recently gained, for they can put an article on the Bogotá market so cheap that European manufacturers will not care to compete therewith. I have seen shoes selling here for $6 a pair which cost in the United States about $1.50 wholesale per pair. Some one is therefore making an excessive profit, and the price at which the article could be sold here, making the minimum of profit, substantiates the statement made above and would effectually block all competition.

In a conversation a few days ago an English merchant was heard to say, "America has completely driven out all competition in the shoe market here, and it will only be her own fault if she ever surrenders the market again, as under normal conditions it is impossible for Europe to compete with her," and this about expresses the situation, but I regret to say that from present indications our merchants are pursuing the very course to lose it, and lose it quickly.

If our merchants and manufacturers would confine themselves to shipping a good, medium quality of shoe, thereby cultivating the market and giving some thought to their customers—in other words, finding out the desires and wants of the people, and not trusting to statements of merchants here—their standing on the market would become so firm that there would be no chance of their losing it, for there can be no doubt of the growing popularity of American shoes.

On the other hand, instead of improving their favorable hold on the market by shipping the class of shoes referred to, the merchants here have imported very recently a class of rubbish and cheap stuff, the manufacturers congratulating themselves, likely, at having gotten rid of the goods, and the merchants here at having made their profits, neither giving thought to the injury that will result in future therefrom in this profitable market.

While the people in their present mood take them eagerly, being American shoes, unfavorable comment has already arisen, and one result has been the boycott mentioned at the beginning of this article.

The continuation by American shoemen of the policy just cited can but result in the return of this trade to the English and other European manufacturers, to whom, under ordinary circumstances, it ought never to return, and the loss to the United States of a profitable market in the future.

While there is a tenfold increase on both shoes and leathers in the new tariff, the relative position of the importer and native maker remains the same. The Bogotá workmen use, in all cases, native-made leather for soling and heeling, but this gives them no advantage in competing with the ready-made imported article. With the present conditions the workman has to pay a considerably higher price for native-made leather, which is of very poor quality, than would have to be paid in the United States for a very much superior article.

ALBAN G. SNYDER,
Consul-General.

BOGOTÁ, COLOMBIA, *June 29, 1903.*

EXPORTS OF BOOTS AND SHOES FROM THE UNITED STATES TO COLOMBIA.

The following table, prepared in the Bureau of Statistics, Department of Commerce and Labor, shows the exports of boots and shoes to Colombia during the years 1893–1902, inclusive:

Year.	Quantity.	Value.
	Pairs.	
1893	32,467	$33,044
1894	27,780	26,489
1895	32,697	29,489
1896	35,690	34,467
1897	43,794	42,719
1898	44,852	41,430
1899	36,819	34,231
1900	56,936	54,145
1901	61,156	64,477
1902	48,616	52,670

It will be seen from the above table that while the export trade of boots and shoes to Colombia for 1902 fell off in numbers of pairs as against the years 1900 and 1901, yet the quality of goods sold in 1902 and 1901 was of higher grade than that of 1900 and previous years.

AMERICAN SHOES IN GERMANY.

The advent of the American shoe in Germany as a factor of noteworthy statistical record dates from the year 1900. During three or four years previous to that date consular reports had pointed out the opportunity that was open and running to waste in this country, and several enterprising salesmen with samples had made the tour of the leading German cities and sold more or less important bills of shoes to the leading retailers. But as these were retailed at from $7 to $7.50 per pair, and as no practicable arrangement was made for replenishing promptly those small stocks when certain sizes and shapes became exhausted, these earlier ventures had little effect beyond showing the German public the high standard of finish and quality that had been attained by factory-made shoes in America, and thus paving the way for an immediate success by such parties as should undertake the business on a large scale and in the proper way.

On the 6th of April, 1901, Messrs. Barthman & Co., of Newark, N. J., opened, at the corner of the two principal retail streets in Berlin, a large, handsome store equipped throughout in the most modern and improved American style. The stock embraced the work of two well-known factories in the United States, one of which makes exclusively men's shoes, the other exclusively women's, all of which—coarse, fine, brown, black, or enameled—for either sex, have been sold from first to last for one uniform cash price, 18 marks ($4.28). From the date of opening until the close of the year—a little less than nine months—this one store sold 26,600 pairs of shoes, a success so immediate and decisive that the same firm decided to open two more similar establishments, viz, in Frankfort and Hamburg, where expensive but spacious and attractive premises were leased in new buildings in the most prominent shopping districts of both cities. The Frankfort store was opened March 1, 1902, and the one at Hamburg on the 1st of October of the same year. The sales of the three establishments during the year, in which the Berlin house was open twelve months, the one at Frankfort ten months, and the store at Hamburg three months, aggregated 53,500 pairs. From January 1 to July 15, 1903—a fortnight more than six months—they have sold 54,400 pairs of shoes, and the business shows a steady, normal increase, the sales of any given month exceeding those of the corresponding month of the preceding year by 20 to 30 per cent. This is the record of the one really intelligent, well planned and executed effort on the part of the American shoe industry to work the German market. On the 1st of September this year another large shoe store will be opened on Friedrich-Strasse in Berlin by an American firm which is engaged here in another line of retail business, but which has been led by observation of existing conditions to embark in the new enterprise.

Besides these there are perhaps a dozen leading retailers who keep in their show windows, and to some extent on their shelves, a more or less meager but well-chosen stock of American-made shoes, but as a rule such dealers are specially interested in the sale of German or Austrian made foot wear and keep in sight just sufficient American-made goods to hold their customers who ask for them, and who might otherwise wander, as many have indeed done, to the exclusively American-shoe stores.

Meanwhile, the German manufacturers, many of whom use the most improved American shoe machinery and have copied, as far as possible under existing labor and other conditions, the factory methods which prevail in our country, have continued to improve their standard of production both in respect to finish and durability. They have adopted to some extent the broad, low-heeled, comfortable forms which are now made and worn in the United States. The result, which has been easy to foresee during the last five years, has been gradually developing, the day coming nearer when the German shoe industry will substantially provide for its own home market. That this day may be long in coming, and that meanwhile Germany is a large buyer of foreign-made shoes, will be evident from a glance at the statistics of importation.

The official returns, which give only the gross weight but make no account of pairs, show that in 1900 Germany imported 792 tons of shoes, valued at 9,505,000 marks ($2,257,190), of which 34 tons, valued at 412,000 marks ($98,056), came from the United States. In 1901 the whole import was 748 tons, valued at 8,977,000 marks ($2,136,526), a net decrease of 44 tons, while the share contributed by the United States nearly doubled, rising from 34 tons to 64 tons, valued at 771,000 marks ($183,498). In 1902 the total import of shoes declined still farther to 699 tons, but the American contribution again slightly increased to 68 tons, valued at 811,000 marks ($193,018). During the six months from January 1 to June 30, 1903, the whole import of such shoes to Germany has been 368 tons, of which the United States supplied 52 tons, as against 37.5 tons during the same period in 1902. How accurate these official statistics are in showing the real origin of all imported foot wear it is impossible to say; it is probable that a good many of the shoes ascribed to British origin in the returns of 1901–2 were really of American make and sold to German dealers by firms having wholesale depots in London.

It has been shown in a preceding paragraph that Germany imported last year 699 tons of shoes, of which 68 tons, or somewhat less than 10 per cent, are ascribed in the official statistics to American origin. The bulk of the remainder came from Austria-Hungary, which country exported to Germany 478 tons of shoes in 1900, 465 tons in 1901, and 427 tons in 1902. The remaining shoe imports of last year were from the following countries:

	Tons.
Belgium	29
France	41
Great Britain	43
Italy	52
Holland	52
Switzerland	10

During the same year Germany exported 443 tons of shoes—nearly two-thirds as many as were imported—the bulk of which went to Switzerland, Great Britain, and the Netherlands.

These statistics are given to show how large is the aggregate foot-wear traffic in Germany and how small a part, after all, the American-made shoe plays in the general movement. It is true that the German import shoe trade from the United States is wholly the growth of the past four years, and that it is steadily increasing, while the imports from Austria, Switzerland, Belgium, and Great Britain, as well as the grand total of shoe imports into this country, are steadily decreasing; but no one can examine the present situation in all its bearings without reaching the conclusion that, brave as is the beginning already made, the field is as yet by no means fully worked. It has been pointed out in these reports that although Berlin, Hamburg, and Frankfort have each one distinctively American shoe store, all successful from the day when they were first opened, there remain a dozen other important German cities which have not even one such establishment. There is no apparent reason why cities like Leipzig, Aix la Chapelle, Dresden, Munich, Stuttgart, and Cologne, to say nothing of Breslau, Mainz, Mannheim, and Strassburg, should not offer a promising field in which to repeat the successful enterprise already achieved at Berlin, Hamburg, and Frankfort.

Shoes of the grades adapted to the German market are all of the class designated under section 552*a* of the present German tariff law, dutiable at 65 marks ($15.40) per 100 kilograms (220 pounds avoirdupois). This makes the actual duty on a pair of shoes from 12 to 20 cents, according to their weight. Under the new tariff act passed in December last, which is expected to go into effect some time during the year 1904, this schedule is divided into three classes, and advances to 85 marks ($20.23) per 100 kilograms the duty on coarse leather shoes weighing 1,200 grams (2.6 pounds) or more per pair; 120 marks ($28.56) per 100 kilograms on shoes weighing between 1,200 and 600 grams (1.3 pounds) per pair; and 180 marks ($42.84) on fine shoes which weigh less than 600 grams per pair. Most American shoes would come under the last two categories, so that, roughly speaking, the present duties on men's shoes will be doubled and on women's fine shoes about trebled by the new schedule, unless it should meanwhile be modified by treaty of reciprocity.

FRANK H. MASON,
Consul-General.

BERLIN, GERMANY, *August 1, 1903.*

EXPORTS OF BOOTS AND SHOES FROM THE UNITED STATES, 1893 TO 1903, INCLUSIVE.

[Compiled in the Bureau of Statistics, Department of Commerce and Labor.]

Year.	Pairs.	Value.	Year.	Pairs.	Value.
1893	493,027	$590,754	1902	3,966,766	$6,182,098
1894	647,318	777,354	1903	4,197,566	6,665,017
1895	822,412	1,010,228	Total	22,138,277	32,701,230
1896	1,036,235	1,436,686			
1897	1,224,484	1,708,224	1903	4,197,566	6,665,017
1898	1,307,431	1,816,538	1893	493,027	590,754
1899	1,934,277	2,711,385			
1900	3,016,720	4,276,656	Increase	3,704,539	6,074,263
1901	3,492,041	5,526,290			

EXPORTS BY PRINCIPAL COUNTRIES.

The following comparative statement shows the countries in which our boot and shoe trade has increased the greatest during the past ten years:

Country.	1893.		1902.	
	Pairs.	Value.	Pairs.	Value.
United Kingdom	3,179	$5,512	1,035,396	$2,013,890
Germany	505	767	122,689	197,937
France	3	5	39,032	97,081
British Africa	840	877	168,097	270,105
Australia	3,113	5,756	550,469	955,230
Argentina	....	....	30,880	63,273
Total for principal countries	7,640	12,917	1,946,563	3,597,516

The net increase for the above six countries is 1,938,921 pairs, valued at $3,584,599.

OPPORTUNITY FOR AMERICAN ENTERPRISE IN MADRID.

The prospective building of the Gran Via, the great boulevard that is to run from the Puerta del Sol through the crowded quarter of Madrid to the new part of the city, offers a splendid opportunity for American capitalists to invest with profitable results. From a conference with the projector of the Gran Via and the civil governor of Madrid, I am able to communicate to the Department an outline of this great work, in the hope that it will find means to bring the matter to public notice in the United States. Let me then briefly outline the reasons for this undertaking, which are: (1) the terribly crowded condition of the old quarter (the great disease breeder of the city) and the consequent desire of the municipality to direct popular habitation to the open fields in the suburbs, and (2) the vast army of unemployed that is constantly streaming into Madrid, offering even now a serious problem to the Government. To facilitate easy communication between the Puerta del Sol and the new part of the town and the squares thereabouts, to reach which takes considerable time, and to improve the sanitary condition of the city, the Government accepted the plans of Architect Señor José L. Sallaberry and will now build the Gran Via; but as everything of a public character in Spain is done by private contract, the Government has subsidized the project in the following manner:

1. It grants eight years to the contractors in which to complete the work, and provides no penalty if not finished within the specified time.

2. It sells to the contractors all the properties, inclusive of buildings, along the line of the projected boulevard at the present rate of depreciated values, for which the properties have already been condemned.

3. It exempts forever from increased taxation the properties so acquired after the boulevard shall be built.

4. It exempts forever the properties so acquired from the 4 per cent sale and resale tax which must be paid on all real estate sold.

5. It grants the contractors exclusively a perpetual franchise for a street-car and electric-plant system on the boulevard, which is to be a mile in length and to continue at the pleasure of the contractors.

6. It permits the erection of nine-story buildings on both sides of the boulevard and exempts the owners from taxation on modern improvements.

7. It permits the construction of kiosks along the route without taxation and benches and chairs, for which the contractors are free to charge a certain price. A similar charge is now exacted on the line of the existing boulevard.

8. It subsidizes the undertaking with 11,000,000 pesetas ($2,123,000), payable, with interest, in four installments.

There is enough building material in the old houses to build one-third of the houses on both sides of the boulevard. There are immense fields about Madrid where billions of bricks can be made, and both land and labor are very cheap.

ADOLPHE DANZIGER,
Vice-Consul.

MADRID, SPAIN, *July 14, 1903.*

AMERICAN TRADE OPENINGS IN GERMANY.

In his annual report covering the trade and commerce of Stettin for the year ended June 30, 1903, Consul John E. Kehl writes as follows concerning trade openings for American manufactures:

BROOMS.

Brooms are very expensive here and, as a rule, are made of very poor corn. Whisk brooms are practically unknown in this district. The import duty on coarse brooms with rough handles is 3 marks (71 cents) per 100 kilograms (220.46 pounds).

SHOES.

Shoes of American shapes and styles are becoming very popular; the sign "American fashion" on even German-made shoes is very common. The import duty on common shoes is 50 marks ($11.90) per 100 kilograms; on fine shoes, 65 marks ($15.47) per 100 kilograms. Under the new tariff, not yet in force, the duty will be from 85 to 180 marks ($20.23 to $42.84) per 100 kilograms.

CLOTH.

In many of the tailoring establishments English cloth is used. In display windows small tags bearing the legend "Real English" can be often seen. Why not "Real American?" Samples, with width, length, and weight of bolt, would be the safest means of ascertaining the import duty.

FURNITURE.

If some enterprising furniture manufacturer would make a common bedroom set, after German style in every respect, consisting of single bed, clothes closet, commode, and washstand, with probably two chairs to match, he could, in my opinion, find a good market. Abundance of cheap lumber, with the assistance of labor-saving machinery, should put the American in position to manufacture considerably cheaper than here. The import duty on furniture is 10 marks ($2.38) per 100 kilograms.

BENCH TOOLS.

The American article in this line is, as a rule, lighter, more practical, and more durable than the German make. As to price, I firmly believe that the local article can be undersold.

AGRICULTURAL IMPLEMENTS.

Farm implements, such as hoes, rakes, axes, forks, etc., compare with the local article the same as bench tools. With a live agent, capable of speaking the language and with a full line of samples, some business could be done. Long-time credit forms a great feature of German trade; many complaints have been made that the Americans are too severe in their terms and do not care to fill small orders. This condition of affairs is just contrary to what the German is accustomed to and is the cause of the loss of many orders. In most cases it is policy to cater to the whims of a good customer—a fact which England and Germany thoroughly appreciate in dealing with other nations

UNITED STATES EXPORTS TO GERMANY.

The exports from the United States to Germany of the greater part of the articles mentioned in Consul Kehl's report are given in the publications of the Bureau of Statistics, Department of Commerce and Labor, for the years 1899, 1900, 1901, and 1902, as follows:

Article.	Value of exports.			
	1899.	1900.	1901.	1902.
Agricultural implements	$1,646,711	$2,886,454	$2,677,319	$1,868,672
Brooms and brushes	3,064	2,104	2,322	2,264
Furniture	173,741	166,701	140,092	171,849
Boots and shoes	79,578	113,441	188,795	197,937
Total	1,903,094	3,168,700	3,017,528	2,240,722

AMERICAN FOOD STUFFS AND THE FRENCH MARKET.

There seems to be a total lack of effort on the part of American exporters to introduce into France certain vegetable products which are very plentiful in the United States and are practically unknown here. I refer particularly to maize, groundnuts or peanuts, oats and wheat for table use, and sweet potatoes. I might also add American fresh fruits.

This part of France produces a yellow maize of a very inferior quality, used for feeding farm stock. Small quantities are ground for table use, but as the meal is poorly made and turns bitter eight or ten days after leaving the mill it is not only not a popular article of diet, but is the cause of a prejudice against maize as human food.

The fine quality of American granulated yellow-corn meal is much appreciated in a very limited circle. The people generally know nothing about white and yellow corn meal, hominy, samp, and hulled corn, valuable and cheap articles of diet. The introduction of "johnnycake" to the French public might prove a profitable departure for the United States exporter.

What is said of maize for table use may be said largely of oats and wheat. Small quantities of Scotch oatmeal find their way to the larger towns, but, being generally unknown, it is not popular. Crushed or broken wheat is not used at all and has hardly been heard of.

The sweet potato is better known, but is not generally used, as the quantities received in this part of France are limited and the quality not of the best. Sweet potatoes come principally from Spain.

Although I have traveled for several years in France and have consequently eaten at many hotels, I have never seen sweet potatoes either served or mentioned in the bills of fare. This article of diet, when of superior quality, would surely tempt the fine palate of the French public, and might become a lucrative business to American growers. In considering the best means of rendering popular the above-mentioned articles, it would seem that a lot of earnest and practical advertising should be done, and of this more efficient than the posters on the billboards and notices in periodicals would be an organized effort by which these edibles, properly cooked in various fashions, could be tasted in several stores in every large city.

The attempt to do this at Paris during the exposition of 1900 was a failure, as far as France is concerned, because the number of French people reached by this method was comparatively few. There seems to be absolutely no reason why the above-mentioned food products should not become popular dishes on French tables. As food, they are both healthy, cheap, and nutritious.

I should like also to mention in this place the American peanut, or groundnut. Immense quantities of these nuts are received in France from the west coast of Africa and are used to make oil. In some ports they are received in shiploads of 2,000 or 3,000 tons at a time. I do not know that any come from the United States. Roasted peanuts are rarely seen on the streets or in the shops for sale, and there are no peanut venders on the streets or at the grain fairs. The few that are sold roasted come from Spain principally, and are small in size and of inferior quality as compared with the American product.

Lastly, I wish to call to the attention of our fruit growers the fact that American fruits are scarce in France; I refer to dried, canned, and fresh fruits. American prunes and dried apples are in very strong favor, but the opportunities for placing our dried apples are still many.

California and tinned fruits are to be found in many large grocery stores; but as these fruits are unknown generally and dear in price, comparatively small quantities are sold. What is needed for the development of the trade in these goods, dried as well as canned, is direct relations, in order to avoid the large commissions which are lucrative to the agent to a certain degree but ruinous to the trade.

Concerning fresh fruits, there is very much to be done. Our apples, pears, peaches, and plums I have seen more or less plentifully in English cities; in France they are rare, even at Paris, and, outside of that city, practically unknown.

GEORGE H. JACKSON,
LA ROCHELLE, FRANCE, *August 5, 1903.* *Consul.*

AMERICAN INVESTMENTS AND TRADE IN FRANCE.

United States capital has found at Lille, as elsewhere in Europe, an important and extensive field in street railways. By means of this capital in the hands and under the control of American directors the whole of the Department of the North and the most important part of the Department of Calais are to undergo a widespread and beneficial transformation.

Lille is not only the industrial and commercial center of these two Departments, but it is also the railroad terminus. The necessity of connecting these two Departments with Lille, in view of business relations, has become imperative.

United States capitalists, incorporated under a French company, by granting certain concessions and by making important improvements, have obtained the right to construct a series of trolley-car lines extending to all parts of the two Departments and bringing the chief manufacturing districts into close connection with Lille, the center. The distance which these lines are to cover is about 850 miles.

In order to obtain this concession, with a lease of ninety-nine years, the corporation has contracted to build and lay out a large boulevard between Lille, Rouleaux, and Tourcoing. The cost of this boulevard has been estimated at $400,000.

The project was not carried through without many difficulties, owing to the fact that foreign capital is engaged. All obstacles, however, owing to the pressing need of the work, have given way to popular feeling, which is greatly in favor of the enterprise.

AMERICAN TRADE AGENCIES.

American capital finds easy way into this country, but American products do not. The enormous duties that are levied upon American articles in contradistinction to the more favored nations render it very difficult to place American goods upon the market advantageously.

In spite of these conditions, with perseverance and persistence an opening can be made for our products. Much will depend upon the manner of introducing them. The usual method employed by American manufacturers is to write to the consular officer for the names of firms likely to be interested in their articles offered for exportation. The consular officer as a rule furnishes as many names as possible, but the results are not always satisfactory. During the last fiscal year the above manner of introducing American-made goods has been entirely abandoned at Lille. Instead of sending a list of names to manufacturers at home, the interest of some reliable person likely to undertake the sale of the article proposed has been obtained. The manufacturer is immediately notified to that effect. He is asked to send conditions and samples. In the meantime arrangements are made with the persons interested here, and by the time conditions and samples arrive an agency is already established. By the attestations received from manufacturers this system may be said to have been successful. This manner of introducing goods can, however, be adopted only by consuls who are allowed to do business, as more time and expense are involved than could be afforded by other consular officers. At all events, it is a system with sure and permanent results.

During the fiscal year ended June 30, 1903, the following agencies were established at Lille for purely American products: Pine fiber; dried fruits, apricots, prunes, etc. (two agencies); refrigerators, shipping tags, desks (of which a large number have already been sold), diamond drills, machinery for artesian wells, etc.; and a few novelties.

Application has been received at this office for American cretonnes. It is the intention of merchants here to place this article on the French market.

C. J. KING,
Consular Agent.

LILLE, FRANCE, *July 20, 1903.*

AMERICAN MACHINES AND TOOLS IN ROUBAIX.

American machinery and labor-saving tools are making headway in this great industrial district. American-made boots and shoes are to be seen in most of the large stores. In my last annual report I mentioned a shoe manufacturer of this district who had made a complete change in his establishment by putting in American machinery. His trade has so increased by the change that he will soon have to increase his plant.

American agricultural machinery, tools, etc., are now being used extensively and with great success, and our fruits and canned goods are sold in most of the stores, being generally preferred even to French goods of the same kind. There is a large field in this district for all kinds of American goods, such as machinery, tools, hardware, typewriters, desks, farming implements, stoves, motor cars, bicycles, dried and canned fruit, novelties, etc. The sales of these goods should be intrusted to general agents who understand the language and trade methods of the French. Printed advertising matter, unless in French, is absolutely useless here. Great attention should be paid to packing for export. Poor packing very often causes the loss of a good customer. Weights and measures should always be given in the weights and measures of the country for which the goods are intended. German imitations of American machinery are sold in this district as American machinery, and of course so much cheaper as to keep out the genuine articles.

W. P. ATWELL,
ROUBAIX, FRANCE, *July 22, 1903.* *Consul.*

AMERICAN CEMENT MACHINERY IN SPAIN.

During the past year there has been under course of construction near Pobla de Lillet, province of Barcelona, a plant for the production of Portland cement which, it is claimed by the company undertaking the enterprise, will be equal in grade and quality to that produced in any country in the world.

It was expected that cement from this mill would be ready for shipment some months ago, but the difficulty in transporting the heavy machinery for the kilns over a mountainous country to the cement beds has caused delay, owing to the necessity for building many temporary bridges and roads. I am informed that cement will be produced in six months.

Besides showing the opportunities afforded by this country for the investment of capital, this enterprise—one of the largest in Spain built with Spanish money—is interesting to Americans inasmuch as it has been equipped entirely with American machinery costing over $250,000 and handled by American engineers, a proof of the confidence existing in this country in the ability of our machinery manufacturers and engineers.

I am indebted for the following description of this cement factory to Mr. W. W. Ewing, its chief engineer:

> The cement plant of the Compañia General de Asfaltos y Portland at Pobla de Lillet, province of Barcelona, is installed at present with three modern rotary kilns and all the necessary rock-reduction and clinker-refining machinery as used in modern practice in Pennsylvania, the various machines and kilns being placed on different levels, all forming what is generally known as a gravity plant.
>
> The rock enters the mill at an elevation of 161 feet above the lowest level, or level of road, and gradually passes from the rock breaker to the stone rolls and then to the stone dryer, from which it is conducted to the ball and tube mills, when it is ready to be fed into the upper ends of the rotary kilns. At the same time this process is in progress, in a separate building the soft coal is being dried and pulverized and conducted to tanks in front of the rotary kilns, to the lower, or front,

end of which a center feed of pulverized coal is governed and effected by an air blast. The feed of pulverized stone and coal are so regulated as to furnish the necessary quantity of both kinds of raw material—also to effect the required degree of temperature—to produce in a calcined form normal Portland clinker, which by special cooling devices is made ready for the finishing ball and tube mills, from which latter machines the finished cement is conveyed to the stock house and finally to the packing and shipping rooms, where it is loaded onto wagons of large capacity, ready for hauling by a 50-horsepower steam locomobile, made in California, to the nearest railway station.

The plant is to be driven by vertical impulse water wheels of the latest improvement, each wheel being designed with the special speed to suit the machine or machines to be driven. There are nine separate wheels or drives which afford the supreme advantage of running any one or all parts of the machinery in the various departments at will.

The power to drive the mill is furnished by a waterfall conducted to the mill by a metal pipe line 4.7 kilometers (2.9 miles) in length, furnishing normally about 2,400 horsepower.

The pipe line traverses a rugged, rocky cañon from the mill to the source of the Llobregat River, there being necessary along its length five trestle bridges, one tunnel 100 feet long driven through solid rock, many large rock cuts, and masonry piers of support for pipe. In order to lay this pipe, special roads and incline planes have had to be built to reach, first, the mill with the pipe and finally its disposition along the line, the latter being by far the more difficult.

The coal for the manufacture of the cement it is proposed to extract from a special lignite mine, from which an aërial cable will conduct the material to either a deposit next the company road in Pobla de Lillet or to the mill direct.

In the mill there is to be installed a special compressed-air and electric-light plant for operating the rock drills and lighting the mill and the engineer's house, as well as the administration and chemical-laboratory buildings. There will also be installed a complete machine shop for making repairs of all kinds, which in a cement mill of this kind is an imperative necessity.

The capital invested is some 2,500,000 pesetas ($482,500). The quality of cement is to be equal to the highest grade of the Portland cement made in the Lehigh district of Pennsylvania, the raw product being identical. The present building, one-half of the original project, is 116 by 395 feet by an average height of about 30 feet on each level, of which there are 14. The properties, including the asphalt, cement-rock, coal, and forest claims, are very extensive, there being enough cement rock to last for centuries.

The estimated daily output will be 500 barrels (100 tons) with the present installation. In the near future it is proposed to increase the output to 1,000 barrels per day, there being sufficient power in reserve to operate the larger mill.

With the mechanical advantages possessed in having the latest improved American cement-making machinery and water-wheel construction, combined with the natural advantages of water, rock, and coal, it is assured that the cost of production will be such as to guarantee a greater consumption of Portland cement in Spain, and therefore lead to the more extensive developments of this steadily rising industry within the Iberian Peninsula.

JULIUS G. LAY,
Consul-General.

BARCELONA, SPAIN, *July 21, 1903.*

HUNGARIAN ATTORNEYS AND NOTARIES IN THE UNITED STATES.

The Austro-Hungarian consul at Pittsburg, Pa., lately prepared a report which, when received by the Hungarian Minister of the Interior, caused the issuance of the following order (No. 61221, 1902) by that official to county and city authorities:

The Austro-Hungarian consul has called my attention to the procedure of numerous private agents calling themselves "notaries public," "Hungarian or home attorneys," "law and collection office," etc., who obtain powers of attorney from Hungarian residents to collect the amounts of death benefits due from certain societies or institutions to relatives of Hungarian citizens dying in the United States, or to collect damages obtained judicially, through the consulate at Pittsburg, from the employers responsible. and who then interfere in the action of the consulate by charging fees equal to a considerable amount of the sum collected, or in some cases by having themselves appointed useless trustees or guardians, since a benefit is not an inheritance from an estate, and so wasting the sums collected. The consul finds the cause of such interference in the delays, often extending to many months, of the Hungarian home authorities in sending the necessary powers of attorney to carry out the requests for releases from further demands, signed by the parties, or guardianship letters, of which delay the said agents take advantage to press their claims.

The consul also calls attention to the abuse furthering the interests of the said agents by the visaing and sealing of the requested powers of attorney by the town councils, or the town or circuit clerks,* inasmuch as the agents prevent the consul from collecting the sums of damages or benefit sued for by him on the basis of such powers, by offering a compromise for a smaller sum and exhibiting the afore-described letters of trusteeship or guardianship, the consul having no time nor interest to carry through the validity of the powers of attorney so signed by a judicial suit. Such powers of attorney, he says, ought, according to the laws of most of the States of the Union, to be signed before a United States consul or a royal notary public of Hungary. In view of the foregoing, I charge you to carry out, without delay, the requests of the Austro-Hungarian consuls residing in the United States, and to warn the town councils (magistrates and clerks) to refrain from certifying the identity of the parties on powers of attorney, such certification having no force under the laws of most of the American States.

FRANK DYER CHESTER,
Consul.

BUDAPEST, HUNGARY, *June 30, 1903.*

GERMAN AND AMERICAN VS. FRENCH COAL IN FRANCE.

In reply to an inquiry as to the interest now being taken in this region in American coal, I am obliged to report that no American coal has yet been marketed here in quantity. Should our coal ever reach the interior cities of Europe it will be only after the trade has been firmly established at the coast ports, and then only to reach such interior cities to which the railway haulage will be no greater from the seaports than from the domestic mines, the whole question being that of railway freight rates.

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* Called "notaries" in Germany and Hungary.

It is true that considerable German railway coal reaches the interior of France as far as Lyons in this direction. The German imports assumed serious proportions during the French miners' strike of a year ago, when local coal could not be supplied and long contracts with foreigners were made, all of which have not yet expired. It is even probable that many of these contracts may be extended on terms which the French miners will find it impossible to underbid.

Since the general strike of 1902 and for the above reasons, the mining industry of the basin of the Loire (St. Etienne) has suffered a loss of not less than 20 per cent in production, while the Germans and the mines of the Departments of the Nord and Pas-de-Calais have gained that much of the trade formerly belonging to St. Etienne and the basin of the Loire.

HILARY S. BRUNOT,
ST. ETIENNE, FRANCE, *July 21, 1903.* *Consul.*

DRAWBACKS TO AMERICAN-SPANISH TRADE.

Regarding the commercial activity of Madrid, so far at least as it relates to American importations, I can report favorably. There are several houses here that import American goods, such as electric machinery, tools, plows, pumps, hardware, and patent medicines, directly from American manufacturers, and one American firm—the Holt Manufacturing Company, of San Francisco—has come into the Spanish market with large farming machinery, to which, however, the farm laborers, who form the largest and best-organized union in Spain, do not take kindly, and a short time ago banded together in the north of Spain and destroyed one of these machines.

In general, American goods are favorably received and find a ready market. That which stands in the way of a better and more profitable commercial intercourse between the United States and Spain is the lack of a commercial treaty. The tax on American goods is almost prohibitive, and the merchants are forced to get American goods from France, Germany, or England. As a rule, such goods enter Spain under French, German, or English labels. If these goods are praised, they are praised at the cost of Spanish-American commerce, and it ought to be our pride to sell American goods as American goods. Perhaps a more serious obstacle to the development of a direct Spanish-American commerce is the lack of confidence with which American manufacturers treat the Spanish merchants.

This consulate is in receipt of hundreds of letters from manufacturers and exporters in the United States for names and addresses of firms in Madrid for the purpose of sending catalogues, hoping thereby to receive orders for the various articles they offer for sale. I may state here, quite positively, that nothing will ever result from such proceedings. The merchants, as a rule, admire the pictures in the "books," but never think of them as a means to a commercial end. What the American manufacturers ought to do is to send goods on consignment to responsible firms.

In the sale of goods directly to merchants here, they ought to give reasonable credits. This would, in a measure, counterbalance the high duties. It must be borne in mind that German and other European manufacturers, selling their goods far below the American in price, also extend to the Spanish dealer a long credit. Added to this is the evident lack of faith and respect with which the American manufacturer treats the Spanish dealer, as the following case will illustrate: A Madrid business house sent an order for a certain kind of goods and with the order also sent the money. The American house did not have the specified article in stock and sent another and wholly useless article, stating, "This is what we have on hand; hope it will go." The article did not "go," and the house here has been unable to get any satisfaction from the firm whose self-interest ought to have inspired it to make reparation.

I can not emphasize too strongly the fact that Spanish merchants are, as a rule, honest and take pride in the "perpetuity" of their houses. They are, therefore, afraid of the shadow of a dishonest act, and if they pay slowly they pay none the less surely. I would therefore urge American manufacturers to come into this market boldly and generously.

ADOLPHUS DANZIGER,
Vice-Consul.

MADRID, SPAIN, *July 14, 1903.*

TRADE OF THE UNITED STATES WITH SPAIN DURING THE YEARS 1898 TO 1902, INCLUSIVE.

[Compiled in the Bureau of Statistics, Department of Commerce and Labor.]

Description.	1898.	1899.	1900.	1901.	1902.
Exports	$10,228,545	$9,077,807	$13,399,680	$15,480,288	$15,511,987
Imports	3,575,565	3,982,363	5,950,047	5,409,301	8,270,546

EXPORTING GOODS TO GERMANY.

In trading with the district of Mainz—and the same holds good, more or less, for all other districts of Germany—American exporters should be careful to have it always clearly understood, if wares are sold by weight, whether the weight is gauged by the metric or avoirdupois system, as the metric pound is about 10 per cent heavier than the avoirdupois pound and the metric system is the standard gauge of the German Empire. Articles which are sold in original packages, such as cereal foods and the like, should be packed according to the metric weight, viz, in half-kilogram, 1-kilogram, 5-kilogram (1.1023, 2.2046, and 11.023 pound), etc., packages.

Transportation to Mainz is most easily and cheaply effected by the water route—ocean freight to Rotterdam and thence by barge up the Rhine River. Freight rates on the Rhine are lowest in spring and summer.

As regards the facilities for handling freight in the harbor of Mainz and as to general information regarding opportunities for trade in this section, I beg to refer to my annual report dated September 24, 1898 (Vol. II, Commercial Relations, 1898), as the advice therein given by me still holds good.

Besides the customs duty levied by the Empire, the city of Mainz collects an octroi duty on a number of articles brought into the town.

WALTER SCHUMANN,
MAINZ, GERMANY, *July 13, 1903.* *Consul.*

AMERICAN TOBACCO TRUST IN GERMANY.

Since the American Tobacco Trust gained a footing in the German home markets by buying out some of the leading cigar and cigarette factories and retail stores for the sale of the American product, the German cigar and cigarette manufacturers and other commercial bodies have taken alarm, as they fear that the capitalistic and manufacturing power of America will monopolize many industries—including the retail trade—of Germany.

The Industrial Association of Saxony lately addressed a communication to the Chamber of Commerce of Berlin, in which it sharply criticised the impolitic action of the chamber for having, in answer to an inquiry addressed thereto, expressed a favorable opinion on the quality of the cigarettes sold on the German market by the Jasmatyi firm, one of the branch factories of the American Tobacco Trust.

When the trust learned of the opinion expressed by the chamber of commerce, it was not slow in publishing the indorsement of this high German authority, hence the displeasure of the Saxon association.

SIMON W. HANAUER,
Deputy Consul-General.

FRANKFORT, GERMANY, *August 6, 1903.*

AMERICAN PRODUCTS IN ST. HELENA.

Consequent upon the rise in price of flour in South Australia (the source from which St. Helena draws its breadstuff and grain supplies), resulting from the recent severe drought, a considerable quantity of American flour is being imported by steamers via England, figuring under the head of imports from the United Kingdom; this also applies to kerosene, lumber, provisions, cattle feed, etc., which have their origin in the United States.

There is certainly an opening at St. Helena for at least two trading schooners a year, with assorted cargoes of American goods. The alleged drawback is the absence of return cargoes; yet many sailing vessels go to South and West Africa and on discharge of their cargoes proceed in ballast to the West Indies and South American ports and pick up cargoes for Europe and the United States.

A small cargo of cypress-pine lumber shipped at New Orleans for account of the St. Helena colonial government met a bare market, and double the quantity could easily have been placed at a good margin of profit.

For the information of the Navy Department, I would add that the present available supply of South Wales coal in private hands here is about 2,500 tons, quoted at 65s. ($15.82) per ton of 2,240 pounds delivered from lighters alongside at the rate of 200 to 250 tons per day.

ROBT. P. POOLEY,
Consul.

ST. HELENA, *June 27, 1903.*

FOREIGN COMMERCE OF JAPAN.

The foreign commerce of Japan has more than doubled in the last eight years. The commerce of 1902 was greater by $10,890,000 than that of the preceding year.

The exports of 1902 show an increase of 2.3 per cent over those of 1901. When the injury inflicted on the three leading articles of export by the unseasonable spring weather is taken into account, the wonder is that there should have been any increase in exports.

The imports increased still more than the exports, which they exceeded in value by $6,687,240.45. This increase is due to the large amounts of tissues, yarns, threads, and raw materials therefor imported, and to increased purchases of grains and seeds, the importations of other articles being only a little greater or less than in the preceding year. Silk accounts for more than two-thirds of the whole increase in value of the exports, tea and tobacco being next.

TRADE OF THE UNITED STATES WITH JAPAN.

During each of the last five years the United States has purchased more of the products of Japan than any other country, and more than all Europe, yet British India and Great Britain each sell more to Japan than does the United States. However, the imports from the United States last year increased 13 per cent as compared with 1901, while those from most European countries fell off.

The United States continues to surpass all other countries in furnishing Japanese importations of electric-light apparatus or instruments, electric motors, fire engines and pumps, flour, sole leather, kerosene oil, lubricating oil, paraffin wax, cardboard, leaf tobacco, timber other than teak, bicycles and tricycles, and electric-light wire. Last year the United States took the lead, for the first time, in steam boilers and engines and telephones, but seems to be losing ground, as compared with other countries, in the importations of paper-making machinery, spinning machinery, weaving machinery, watches, iron nails, wire and small rod iron, telegraph wire, steel other than mild steel, and glazed or fancy paper.

Some articles which Japan imports in considerable quantities, and which the United States might compete more strongly in providing, are lifting machines, drilling and boring machines, turning lathes, machine tools, condensed milk, rails, fittings of rails, iron pipes, and tubes, belting and hose for machinery, and railway freight and passenger cars.

The imports from Canada and other parts of British America to Japan now amount to only a trifle over 1 per cent of the value of those from the United States, but the people of the Dominion are making a strong effort to increase their trade in the East. At the Osaka Exposition, now open, the Canadians are spoken of as having the largest and best of the foreign exhibits. They are striving especially to advertise the merits of Canadian flour. Bread is baked on the grounds and sold or distributed freely among the natives, to whom the superior qualities of the Canadian product are explained, and it is reported that large orders have been received for flour as a result of this work. The United States has been furnishing from 96 to 99 per cent of all the flour imported into Japan, and last year this commodity ranked third in value of the imports from the United States, raw ginned cotton being first and kerosene oil second. The most important import from Canada in 1902 was salted salmon and trout, of which she furnished nearly twice as much as the United States, followed by timber and lumber—boards and planks—of which her quota was less than two-thirds of ours.

Almost one-third in value of all the exports of Japanese produce and manufactures was bought by the United States, whose purchase of silk alone amounted to more than the entire value of the Japanese imports therefrom and constituted nearly one-half the Japanese exports of silk. Silk in its various forms—raw, tissues, embroideries, etc.—accounts for eleven-sixteenths of the Japanese exports to the United States; the next item in importance being tea, of which we took more than four-fifths of the whole export. Tea and silk make up four-fifths of the exports to the United States, the other one-fifth being divided among 150 articles, of which the most important are porcelain, straw plaits, camphor, floor matting, sulphur, toothbrushes, fans, and refined copper.

TRADE WITH THE PHILIPPINES.

The trade with the Philippine Islands has shown a declining tendency for some years. In 1902 the imports from that archipelago were less than in any other year of the last five, while the exports to the islands were less than in 1901. Sugar is the chief import into Japan from the Philippines, followed by flax, hemp, jute, and china grass. The exports to the Philippines cover a wide range, that of coal being of the greatest value, and potatoes second.

TRADE WITH HAWAII.

The imports from Hawaii, although increasing, are still of little value, consisting chiefly of sugar. The exports to Hawaii include more than 130 different kinds of commodities, the most important being saki (a Japanese liquor resembling beer), rice, and soy (a condiment much used by the Japanese). An inspection of the items in the list of exports to Hawaii suggests the thought that this trade is principally due to the Japanese emigrants who have settled there.

EXPORTS AND IMPORTS BY COUNTRIES.

The value of the exports to and imports from the principal countries from and into Japan are shown in the following table:

Country.	Exports.	Imports.
China	$23,325,595.30	$20,214,247.43
British India	6,641,773.92	25,386,629.77
Hongkong	12,886,277.32	1,222,530.92
Korea	5,255,982.92	3,963,057.24
Russian Asia	1,068,190.79	2,970,001.11
Philippine Islands	862,406.00	743,944.83

Country.	Exports.	Imports.
Other Asiatic countries	$391,125.35	$5,435,393.24
Great Britain	8,638,382.33	25,081,286.60
France	13,587,162.01	2,363,396.28
Germany	2,359,040.54	12,854,834.83
Other European countries	8,791,233.27	6,470,804.69
United States	39,955,936.97	24,229,106.81
British America	1,735,918.85	257,602.49
Hawaii	912,980.07	11,316.40
All other countries	2,222,890.65	4,117,924.08
Total	128,634,926.29	135,322,166.72

RAILWAYS.

Soon after the Japan-China war, the Japanese Government adopted several measures involving the expenditure of considerable sums in industrial enterprises which would require several years for their completion. Among these was a scheme for the expansion of State railway lines. Of 738 miles of railroad then projected 169 miles had been opened for traffic the 1st of April, 1902, and from the appropriation of $42,454,002 for this purpose $23,717,250 had been expended. The Diet was asked last winter to make a further appropriation of 55,000,000 yen ($27,499,900) for the construction of these roads, and this was granted; but it is claimed that the ministry have consented to introduce a bill into the Diet at its next session providing that future expenditures for railway construction shall be limited to the profits from lines already in operation. The total mileage of State railways on April 1, 1902, was 1,060, and the net profit for the previous year was $4,182,227.74, or a fraction over 8 per cent on the cost of construction. The total mileage of private roads at the same date was 2,967, and they report a profit of 8 per cent. The total passenger mileage on all roads for the year was 1,899,253,377 and the total goods ton mileage 791,106,994. There are 1,350 locomotives, 4,529 passenger cars, and 19,774 freight cars in use.

STREET RAILWAYS AND AUTOMOBILES.

The people of Japan have hitherto depended principally on the jinrikisha as a means of going about the cities, although electric street railways and horse-car lines exist in some places. An electric street tramway company was organized in Tokyo, the capital, several years ago, but owing to insufficiency of funds no further progress was made. Lately, English capitalists have arranged to take half the shares of the company, which is thus enabled to proceed with its plans, and workmen have begun to set poles and stretch the wires for the street-car lines. An automobile has been purchased by a silk firm for use in delivering goods, and promoters are endeavoring to establish a company for operating a passenger automobile service between Nagoya and Atsuta, two cities about 10 miles apart in the center of the porcelain-manufacturing district, already connected by steam railway.

GOVERNMENT SHIPBUILDING AND STEEL PRODUCTION.

For the purpose of rendering the country independent of foreign industry in all that pertains to the building and furnishing of ships, an iron industry was established at Wakamatsu, in the northern part of Kiushu Island, and although more than $10,000,000 has been expended where the original estimates called for only $2,000,000, and a committee of investigation appointed by the Japanese Government has lately reported that the works can not be expected to become self-supporting before the fiscal year 1907–8, there is no sign of faltering on the part of the Government. The budget presented to the Diet at its last session contained an item of $1,000,000 as a supplementary fund for the Wakamatsu foundry, and this has been granted.

In spite of the fact that lower taxation was made an issue between the political parties, the Government has lately engaged in the construction of another foundry at Kure, a port on the eastern coast of the main island.

It is computed that the Wakamatsu foundry will turn out 30,000 tons of manufactured iron during the fiscal year 1903–4, but that its value on the market will be only about two-thirds the working expenses of the foundry. Two iron mines and three coal mines within a radius of 20 miles of the works have been acquired for the use of the Wakamatsu works and have been connected therewith by railways. The works are designed to supply the steel materials required by the Government departments, and will supply certain kinds of steel in large quantities to Japanese engaged in industry. Of the three battle ships, three armored first-class cruisers, and three second-class cruisers now about to be added to the Japanese navy, it is reported that all except one battle ship will be built in native yards. This will be the first experience of the native shipbuilders in constructing any war ship of a class higher than cruisers, and there are not now facilities for manufacturing armor plate for such vessels; but the Kure foundry is expected to be able to provide plates of this kind after 1905.

SHIPPING.

The number and tonnage of merchant vessels, steam and sail, which entered Japanese ports during 1902 was greater than in any previous year. There is no marked change in the proportion belonging to different countries, though the increase, both in number and tonnage, of Japanese vessels was greater than in those from other countries.

IMPORTS AND EXPORTS OF SPECIE.

In spite of the excess of imports over exports of commodities, the imports of gold and silver specie and bullion exceeded the exports by $15,005,923.38. How much of this is due to the sale in London of the Government bonds to the face value of $25,000,000, for which arrangements were made in October, it is not possible to determine, but it is significant that the excess in value of imports of commodities plus the excess of imports of specie and bullion is a little less than the value of the bonds.

BANKS AND BANKING.

Interest rates have declined steadily throughout the year, and the banks report increased deposits, due to inactivity in trade and industry.

E. C. BELLOWS,
Consul-General.

YOKOHAMA, JAPAN, *July 18, 1903.*

JAPANESE TRADE WITH THE UNITED STATES AND THE UNITED KINGDOM.

[Compiled in the Bureau of Statistics, Department of Commerce and Labor.]

Imports into Japan.

Year.	Total.	From United States.		From United Kingdom.	
		Value.	Per cent.	Value.	Per cent.
	Yen.	*Yen.*		*Yen.*	
1881	31,128,125	1,781,108	5.72	16,364,740	52.57
1882	29,441,453	3,106,758	10.55	13,956,048	47.4
1883	28,431,939	3,187,114	11.21	12,744,943	44.83
1884	29,626,781	2,489,969	8.4	12,758,806	43.07
1885	29,356,967	2,751,320	9.37	12,456,610	42.43
1886	32,168,432	3,358,986	10.44	12,703,448	39.49
1887	44,304,251	3,309,269	7.47	18,970,544	42.82
1888	65,455,234	5,673,843	8.36	28,693,567	43.81
1889	63,995,009	6,173,141	9.65	26,067,934	40.73
1890	80,554,874	6,900,190	8.56	26,619,102	33.04
1891	61,969,183	6,840,047	11.04	19,996,050	32.27
1892	70,076,410	5,988,053	8.54	20,789,332	29.67
1893	87,597,095	6,090,408	6.95	27,929,628	31.88
1894	116,284,050	10,982,558	9.44	42,189,873	36.20
1895	127,260,844	9,276,360	7.29	45,172,110	35.49
1896	169,882,595	16,373,419	9.64	59,251,780	34.88
1897	218,440,623	27,030,537	12.38	65,406,266	29.94
1898	274,599,260	40,001,097	14.57	62,707,572	22.84
1899	219,228,647	38,215,894	17.43	44,836,994	20.45
1900	286,170,933	62,761,196	21.96	71,638,220	25.03
1901	255,816,645	42,769,430	16.71	50,575,789	19.77
1902	271,731,259	48,652,825	17.9	50,364,029	18.53

Exports from Japan.

Year.	Total.	To United States.		To United Kingdom.	
		Value.	Per cent.	Value.	Per cent.
	Yen.	*Yen.*		*Yen.*	
1881	30,282,563	11,056,464	36.51	3,514,476	11.61
1882	37,240,914	14,253,291	38.27	4,981,546	13.37
1883	35,706,356	13,247,840	37.1	4,832,007	13.81
1884	33,061,902	13,130,923	39.72	3,830,684	11.6
1885	35,792,752	15,639,005	43.69	2,453,167	6.85
1886	47,346,893	19,992,429	42.23	4,195,355	8.86
1887	50,551,523	22,243,441	44	3,478,729	6.88
1888	62,680,613	23,475,806	37.45	8,710,012	13.89
1889	68,423,131	26,109,835	38.16	7,964,599	11.2
1890	54,891,597	20,844,252	37.97	5,638,980	10.27
1891	77,915,626	29,795,754	38.24	5,633,136	7.23
1892	89,339,134	38,674,971	43.29	3,921,752	4.39
1893	88,140,793	27,739,458	31.47	4,995,974	5.67
1894	111,297,689	43,363,557	38.96	5,950,197	5.35
1895	133,516,985	54,028,950	40.46	7,883,091	5.9
1896	114,615,783	31,532,341	27.55	9,012,398	7.86
1897	159,388,425	52,436,404	32.9	8,481,195	5.32
1898	162,796,651	47,311,154	29.06	7,783,643	4.78
1899	211,495,335	63,919,270	30.22	11,270,770	5.33
1900	198,063,547	52,566,395	26.53	11,262,997	5.69
1901	252,349,543	72,309,359	28.65	11,482,504	4.55
1902	258,303,065	80,232,805	31.06	17,346,149	6.71

NOTE.—Prior to 1891 Canada was included in Japanese exports to and imports from the United States. Imports and exports by Japanese Government are not included in this table.

Value of yen on January 1, 1885, in United States money, 85.8 cents; 1890, 75.2 cents; 1891, 83.1 cents; 1892, 74.5 cents; 1893, 66.1 cents; 1894, 55.6 cents; 1895, 49.1 cents; 1896, 52.9 cents; 1897, 51.1 cents; subsequent years, 49.8 cents.

AMERICAN PORK NO LONGER PROHIBITED IN TURKEY.

On April 20, 1881, the Sublime Porte issued a decree prohibiting, "in consequence of the existence of trichinæ in the salt pork imported from America," importation of this meat into the Empire. A year later this measure of interdiction was extended to ham and lard of the same source. Minister Wallace observed in those days that in spite of the decree nearly nine-tenths of the salted meats consumed in Turkey would continue to be American under some foreign brand. While this prediction has proved correct to some extent, it is interesting to learn that the Turkish Government, in reply to representations made in April, 1900, by Mr. Griscom, chargé d'affaires, and in March, 1901, by Minister Leishman, has removed the prohibition against the importation of American pork products. Importations of this character must be accompanied by certificates from the sanitary authorities at the point of departure, authenticated by the Turkish consul, showing that the article has been microscopically examined and found clean. On arrival in a Turkish port the shipment will be examined again and admitted if found perfectly sound; otherwise it will be returned. In my report on this subject to the Department of State under date of February 2, 1900,* I stated that grocers here wanted American hams for this market. I would now recommend that exporters at home take advantage of the opening afforded. Correspondence should be addressed to Fadoul Ribeiz, George Komnos, or Najib Letayf, of Beirut; American Exchange Company, Haifa; Meshaka & Nachman, Damascus; John Hakim, Tripoli.

G. BIE RAVNDAL,
Consul.

BEIRUT, SYRIA, *July 1, 1903.*

AMERICANIZING SCOTLAND'S INDUSTRIES.

In an article under the caption of "Americanizing Edinburgh's industries," the Edinburgh Dispatch of July 18, 1903, says that in many British engineering shops and other establishments American systems and methods of employment and pay have been adopted during the past two or three years. They are described in detail, as follows:

> One of the latest of these is a premium or bonus arrangement, which has been already introduced into Edinburgh and is at present in use in one of the departments of our greatest engineering establishments. This premium system might be termed an alternative to the well-known system of piecework. It has all the advantages of payment by time and none of the disadvantages of piecework, including that known as "cutting the prices;" while it also insures that the employer will get the maximum amount of service for his plant. By it a workman receives a premium for completing any given piece of work in less than the usual time recognized for doing that work. The premium varies according to the time occupied less than the maximum; and the period allowed for the work depends on its nature, and is regulated by the practice of the trade. To take the engineering trade as an illustration, say a man is paid at the rate of 6s. ($1.46) per day and is put onto some part of a machine for the making of which six days is the recognized time. If he completes the job in five days he is paid a bonus of half a day's wages, or 3s. (73 cents). Thus, by this arrangement, he can make 33s. ($8.03) in five days and has the opportunity of making another 6s. ($1.46) by beginning a new job on the sixth day. On the other hand, if he does not finish the article in the six days he loses nothing, as he is paid so much per day whether he is working on a job or not. The advantage to the master is that he saves half a day's wage on that particular piece of work; he gets the best return from his plant and the best work of his employee, and his output is consequently increased. Another variety of this bonus system is one which is in use in many of the great factories of America. By this method a piece of work is given out to a man, and a committee, consisting of the best and most intelligent workmen in the establishment, decide not only what is the minimum space of time in which the work can be done, but also how

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* Printed in CONSULAR REPORTS No. 237 (June, 1900), page 223.

it shall be done, the time to be spent over each operation, and even the tools to be used. This committee says to the workman: "Here is a piece of work; if you finish it in the time we have fixed, which has been arrived at by careful examination and minute calculation, we shall pay you a bonus of half the value of the time saved. You must do it according to our calculations and directions. If you have any ideas of your own, you may suggest them, but you must not put them into practice to the abandonment of ours." If the workman does not finish the work in the stipulated time, he not only loses his bonus, but if the committee, after consideration, thinks that he has unduly exceeded it, he is warned, and if the "offense" be repeated the workman is summarily dealt with. Needless to say, this latter system is not regarded with much favor in this country; the former method of leaving the matter in the hands of the workmen being considered the best means of encouraging him to put his skill and intelligence into the work.

THE ONE-BREAK DAY.

The "one-break" system is another American idea which has gained a footing in this country and is rapidly growing in favor. By this arrangement the breakfast hour is done away with, and the men start work at 7 or 8 o'clock in the morning, having had a good meal; there being only one break during the rest of the day for dinner. It is contended that this is a much better method, both for men and masters. The men do not start hungry, and being therefore fresher and better rested they are able to pay more attention, and consequently turn out more and better work. Then, again, the waste, inconvenience, and delay caused by stopping, restarting at breakfast time, the annoyance of men coming in late, and the other evils of the two-break system are done away with; the output is increased, and the men are healthier and more physically fit to undertake the duties of the day. The one-break system was first introduced into Great Britain by a Leeds firm in April, 1901, and was quickly imitated by another firm in the same town. The workmen at first raised an objection, on the ground that the day was too long to work with only one break, and asked either for a reduction of hours or a withdrawal of the system. The matter was subsequently discussed at a central conference of the Engineering Employers' Federation, where it was stated that 83 firms throughout the country, of which 26 were federated firms, had adopted the system, and were on an average working a 51-hour week. The experience of these firms, it was stated, was that the workmen, after they became accustomed to them, preferred the altered hours. In 13 firms the hours were divided as follows: Monday, 8 a. m. to 6 p. m., with the dinner hour from 12 to 1 o'clock; Tuesday, Wednesday, Thursday, and Friday, 7 a. m. to 6 p. m., with the dinner hour at the same time; Saturday, 7 a. m. till noon—a total of fifty-four hours. Of course, these new methods of premiums and the one-break system are applicable to any profession, and, indeed, the latter is in use in many other professions in Edinburgh.

A PRACTICAL EXAMPLE.

As a matter of fact, not so very long ago an innovation of a similar nature was made in a brewery bottling department where a very large number of boys are employed. These boys used to be brought in very early in the morning, and were started to work without breakfast, having a breakfast hour between 9 and 10. The result was that, coming in without food, the greater part of the early hours were wasted. The company came to the conclusion that, having boys to deal with, they ought to be taken in a special manner. Instead of rearranging the hours, the company decided on a somewhat novel plan. They made an arrangement whereby hot coffee and rolls were prepared for the boys immediately on their arrival. When the young workers came from home unfed and hungry they found a substantial meal awaiting them, which they took with great gusto, afterwards setting about their work with redoubled liveliness and energy. In order to further encourage these lads to greater efforts, the management decided upon consideration that a certain number of dozen bottles per day would be considered a comprehensive day's work. The result has been that these lads vied with each other, having made it a matter of the keenest rivalry who should first finish their allotted number of bottles. Although the closing hour is 6 o'clock, in many cases some of the gangs—they are all arranged in separate gangs—have actually concluded their day's work by 4.30. The consequence is that there is a healthy competition among the different squads, and when 4.30 or some such hour arrives the first gang is finished, and others hurry up to be equal with them, the next hour or so being spent in relaxation with the concurrence of their employers. Then they get away home refreshed and unwearied with excessive labor, and are eager to turn out sharp and punctual in the morning. More than that, the company offered a premium to their boys who kept good time in the morning, and it turns out that the coffee and rolls and premium combined have had such an effect that the firm has benefited to an extent it never dreamed of when the idea originated.

ONE OF THE DIFFICULTIES.

Interviewed the other day on the subject of premiums by a Dispatch representative, a member of a big engineering firm in Edinburgh said: "On the whole it would be an undoubted advantage, but not of such a nature that everyone would be likely to adopt it. One of the difficulties of the system would be to define when the benefit of increased output was created by the workman, and when it was the result of improvements introduced at the expense of the employer. In large establishments improved machinery is constantly being introduced, and it often happens that a great deal of the decreased time in completing a given piece of work arises not from the workman's exertions, but from improvements at the master's cost. Far more improvements in this direction emanate from the management." Asked what he thought of the one-break system, this gentleman replied: "There is no doubt about it; the one-break system is a very much better arrangement."

VIEWS FROM GLASGOW AND THE WEST.

With the motor-car boom, these new industrial methods have gained a footing in Glasgow. Several of the large motor-car-manufacturing firms, including the Mo-Car Syndicate at Paisley, have adopted the premium-paying system, by which the men are encouraged to do more than the minimum expected of them by sharing in the extra profit accruing. Other firms are more conservative in their methods; but the advantages of the American system are recognized by their managers, although they hesitate at the moment of upheaval that would be entailed in upsetting present customs. The manager of the largest cycle works in Glasgow, in conversation with a representative of the Dispatch, was ready to admit that one feature of American engineering would be distinctly advantageous—a working-day with only one break for dinner, involving the abolition of the breakfast hour and the starting of the works an hour or two later than 6 o'clock, the orthodox starting hour for engineers. There is always a certain amount of leakage in stopping and restarting the men and the machinery, which would thus be saved, and in the case of large works employing several hundred hands the saving would be considerable. Even Glasgow employers, however, place a great deal of faith in the policy of hastening slowly.

In another quarter the American system of bonus paying has been receiving some attention. An attempt was made recently at Kilmarnock to introduce the progressive premium system, as it is called, into the iron works, but it met with opposition on the part of the employees. In the case of one Dundee engineering firm the proposals have taken practical shape and are undergoing consideration on the part of the workmen. Some attention has also been given to the subject in Glasgow. A representative of the iron molders, in the course of a conversation on the subject, stated that the men were not at all averse to employers adopting this system where there was a large amount of capital sunk in plant, it being to the employers' advantage, of course, to get the best return possible from their expensive machinery, where the oncost charges are heavy and wages do not practically form the sole item in the cost of production.

WHAT THE IRON MOLDERS THINK.

In the case of iron molders, however, it is different. Their point of view is expressed in a recent report of their association, in which the premium system is discussed. It states that the premium system, "as we understand it, means that any workman who may require, say, nine hours to produce or make a piece of work is to be asked to do it if he can in seven hours, and he will receive an hour's pay as bonus—*i. e.*, be paid for eight hours; or, if a workman takes forty hours to complete a job, if he can do it in thirty-five hours or less he gets the one-half as a bonus. This mode of working would apply to time workers. The foreman and manager will consult over any pattern and consider how many hours this should be cast in, and also the time noted when it is taken out of mold, and sand restored to a working condition ready for another job. The workman gets a card from the foreman when he gets his pattern. At the top of the card is the number of hours allotted to begin and fully complete that job. Should he take four or five hours longer, he will be paid certainly, but an inquiry will be held and a satisfactory reason for such delay is expected. This system of work may do for some trades, but in molding unforeseen obstacles, which can not always be provided for, continually face the workman, and in our opinion should this plan become general the middling and poor workman will fare badly. It is said by the advocates for such a system that no honest employer will reduce a time once given for a job, should any workman make a good premium, but to our mind this premium system would be worse and morally debasing to any other system we presently know of."

RUFUS FLEMING,
EDINBURGH, SCOTLAND, *July 20, 1903.* *Consul.*

NEW OIL ENGINE.

In a type of oil engine which has attracted much favorable notice the oil is vaporized and ignited without the use of any external source of heat. The main drawback has been that the engine would not run indefinitely with light loads, owing to the explosions not occurring with sufficient frequency to keep the igniting portion at a sufficiently high temperature. A modification of this type of motor just brought out by the Britannia Company, of Colchester, England, is claimed to be free from this drawback. The vaporizer is arranged, as usual, at the back of the cylinder. On the suction stroke a vapor valve is opened by the cam shaft, and through this valve air is drawn into the cylinder through the vaporizer, into which at the same time a little oil is sucked through an automatic valve. This mixture of air and oil is in itself too rich to be explosive and the main supply of air is drawn through a separate air valve into the cylinder. Two passages connect the vapor valve with the cylinder. One of these is large and straight, while the other is narrow and U shaped. The lower portion of the U contains the igniter—a piece of metal having ribs, which enable it to absorb heat readily when the explosion takes place. This piece therefore becomes and remains red hot, while the rest of the vaporizer is only at a black heat. The vapor which is drawn through this igniter on the suction stroke is far too rich to burn, but on the compression stroke air is forced back into the igniting piece and provides the necessary oxygen for the vapor already there to ignite. None of the exhaust passes through the igniter, which is consequently not cooled down in the case of a missed explosion. The proportion of oil and gas used is regulated by throttling the air supply. As already stated, part of this air is drawn through the vaporizer and the rest through the air valve. If the admission to the latter is throttled a greater proportion of the air used will be taken through the vaporizer and will carry with it a proportionately greater amount of oil. The makers claim that, once started, the engine will run absolutely without attention for several hours.

OLIVER J. D. HUGHES,
Consul-General.

COBURG, GERMANY, *July 24, 1903.*

NEW CURE FOR CANCER.

At the clinic of Prof. Dr. Ernst von Leyden, of the faculty of the Friedrich-Wilhelm University in Berlin, there are now in progress tests with a preparation for the treatment of persons afflicted with cancerous disease. The preparation was invented by Dr. Julius Gnezda, a scientist who has made various contributions to physiological chemistry, and who read, among other papers, a thesis at the International Medical Congress, held at Washington in 1887, on the subject of cobra poison.

The facts which led Dr. Gnezda to prepare the substance in question were:

1. The beneficial effect of Fowler's solution on patients with cancer of the stomach, already observed and recorded by other physicians.
2. The retention of chlorine in the tissues of said patients.
3. The good results which Dr. Gnezda obtained when he treated patients with albuminous matter that contained phosphorus in an organically combined form.

Consequently, Dr. Gnezda went on to prepare a compound which contained the underlying principles of the therapeutical actions described, the process of the manufacture being substantially given in the application for the patent. The preparation which is being tested at present is made from the white of egg—200 grams of white of egg were treated with 40 grams of phosphoric acid anhydride in successive portions. The product was allowed to stand until cool, and there was then added 20 grams of trichloride of arsenic under digestion. After the addition of water, the precipitate was washed out until the wash water gave neither a reaction for arsenic nor for phosphoric acid. Later, the precipitate was washed with alcohol, dried, and pulverized.

The powder called "akarkine" (from the Greek *Alpha privativum*, not or against, and karkinos, cancer) is insoluble in water and weak mineral acids, but is soluble in alkalies. What is more important, akarkine is acted upon by the pancreatic juice and readily digested by it.

The chemical analysis of akarkine shows a proportion of 4.23 milligrams of arsenic in 1 gram, a fact which tends to prove that one atom of arsenic entered one molecule of albumin, the molecular weight of albumin generally being considered as 14,000 to 15,000.

Akarkine is administered in the clinic of Professor Leyden at the beginning in doses of half a gram three times a day before meals. The doses are increased successively to 4 grams a day and more. No untoward effects were observed and especially no rising of the temperature, irritation of the stomach, or weakening of the heart action.

In special regard to persons with cancer of the stomach, it has been observed that vomiting ceased and that the pains in the abdomen disappeared.

On the question whether and how far akarkine is likely to have a direct local influence on the cancerous growth itself as far as concerns the living growth, Dr. Gnezda does not wish to declare definitely at present, but experiments on growths taken from postmortems have shown that there actually existed an interaction between the constituents of the growth and akarkine.

Further researches on the subject are now in progress.

FRANK H. MASON,
Consul-General.

BERLIN, GERMANY, *July 27, 1903.*

NEW IRON-HARDENING PROCESS.

Phosphorus, as is well known, has the property of imparting a certain degree of surface hardening to iron, but not without producing brittleness. The iron is made to assume a coarse structure, in which the crystals are comparatively loosely bound together. This effect of phosphorus of loosening the coherence of the molecules of the iron greatly facilitates the absorption of carbon by the iron. The carbon rapidly penetrates the iron to a considerable depth, imparting great toughness to the core and nullifying the comparatively slight defect constituted by the inconsiderable brittleness of the surface. Two Prussian inventors apply this principle in their process for hardening iron by heating the same in a tempering powder consisting of organic nitrogenous substances containing a high percentage of fusible ash and employing phosphorus as the medium for the introduction of carbon into the iron. Without prejudicially affecting the welding properties of the iron, it imparts such a degree of hardness thereto that it can neither be cut nor chipped by the best steel used. In order to harden the surface of about 200 kilograms (441 pounds) of iron to a depth of 1 millimeter (0.0394 inch) by means of this process, the pieces should be embedded in a retort, muffle, or the like, in bone dust, to which is added a mixture of 300 grains of yellow prussiate, 250 grains of cyanide of potassium, and 400 grains of phosphorus. The receptacle is well closed, luted with clay, etc., and raised to a clear red or white heat, whereupon the material treated is immersed in a glowing condition in a water or other bath.

OLIVER J. D. HUGHES,
Consul-General.

COBURG, GERMANY, *July 17, 1903.*

NEW CROSS-CHANNEL TURBINE STEAMER.

Perhaps the oldest ferry in the world is the cross-channel service from Calais to Dover. It has been in existence for more than twenty centuries, and the vessels which have been engaged in it include every variety of shipping, from Cæsar's high-peaked galleys, propelled by banks of oars, to the new turbine steamer *The Queen*, which has been in service since June 27, 1903.

During the first century there is no doubt that a cross-channel service of a more or less regular character was established as part of the system of posts maintained throughout the Roman Empire, and was used by the Roman generals commanding in Britain to keep up communication with Gaul and Rome. The lead thus given by the military authorities of Rome was followed by the missionaries, whose constant journeying kept open what may be fairly described as the progenitor of the present vast passenger and mail service, which, by way of Dover and Calais in 1901, numbered nearly 300,000 persons and 4,500 tons of mail matter, the latter carried in 160,000 mail sacks.

The first steamship to sail between Dover and Calais began her voyage in 1820. She was a Scotch-built vessel of 100 tons and named *Rob Roy.* She did not materially reduce the time of crossing, the time then required by sailing ships being two and a half to three hours. It was not till about 1880 that large steamers reduced the time of crossing to about one and a half hours, and it has taken the whole subsequent period to lessen the passage by another half hour.

In *The Queen* the turbine engines are placed well astern and take up but little space as compared with the ordinary engine. The noise made by these turbine engines is unlike the common engine. They make a rumbling noise like rapid-running dynamos. Even in their immediate vicinity there is little or no vibration, but one is conscious of being in close proximity to great power. From amidships forward on the promenade decks there is no noise or vibration whatever, and when the vessel is making 23 knots per hour in good weather passengers are reminded of being on shipboard only by noting that they are gliding rapidly over the sea. Anyone embarking upon *The Queen* without knowing the ship or ever having heard of her will be conscious of the fact, as soon as she is under way, that he is sailing on a steamship unlike any upon which he has ever sailed. In heavy weather, however, the experience must be that of other twin-screw boats.

I am informed that other turbine boats are in contemplation for the service between Dover and Ostend and between Newhaven and Dieppe.

After a month's trial *The Queen* has made the voyage from pier head to pier head in fifty minutes.

J. B. MILNER,
Consul.

CALAIS, FRANCE, *August 3, 1903.*

THE NEW STEAMER.

[Inclosure 1 in Consul Milner's report.]

The new vessel is 310 feet long, with a molded breadth of 40 feet and a depth of 25 feet, and has a complete awning deck.

The machinery consists of Parson's turbines, three being fitted having three lines of shafting. In maneuvering, the center shaft runs free; the two side shafts then take the place of ordinary twin screws, and, as has been demonstrated in the *Queen Alexandra*, the maneuvering power is in every respect as good as in ordinary twin screws, while in the going astern there is none of that objectionable vibration which is to be felt in the most modern twin-screw balanced arrangement.

The main engines in *The Queen* consist of three separate turbines, each driving its own line of shafting, the center turbine being high pressure and the two side ones being low pressure. When going ahead in ordinary work the steam is admitted to the high-pressure turbine, and after expansion there passes to the low-pressure turbines and then to the condensers, the total ratio of expansion being about one hundred and twenty-five fold, as compared with eight to sixteen fold in triple-expansion reciprocating engines. At the ordinary steaming speed of *The Queen* the revolutions of the center shaft are about 700 and of the two side shafts about 500 per minute. This high rotative velocity implies the adoption of propellers of small diameter, and the utmost care is exercised in balancing them so as to obtain the full advantage of the absence of vibration obtained by the adoption of the turbine principle.

When going full speed ahead all the lines of shafting, central as well as side, are in action; but when coming alongside a quay or maneuvering in or out of harbor, the outer shafts only are used, thus giving the vessel all the turning and maneuvering efficiency of a twin-screw steamer. The means for obtaining this maneuvering power demands a word or two of explanation. Inside the exhaust end of each low-pressure turbine cylinder is placed an astern turbine, controlled by slide valves operated by combined steam and hydraulic reversing engines. These valves admit steam directly into the low-pressure turbines, or into the reversing turbines within same, for going ahead or astern. The center turbine under these circumstances revolves idly in a vacuum, its steam-admission valve being closed and its connection with the low-pressure turbines being closed by nonreturn valves. The centrifugal circulating pumps and the air pumps, all of which are in duplicate—one set for each of the two condensers—are driven by independent double-cylinder steam engines, and the feed water is supplied to the boilers by two feed pumps, controlled by a float tank into which the air pumps discharge the condensed water. There are also special pumps for wash deck and fire service, as also the various pumps for oil and water circulation, as required by Parson's system. Steam is supplied to the turbines by two double and two single ended boilers, Scotch cylindrical type.

One noteworthy feature on board *The Queen* will be the absence of the hot cinders and dust, which are—and more especially to ladies—such a nuisance on board most steamers fitted with forced draft.

[Inclosure 2 in Consul Milner's report, issued from the Parsons Marine Steam Turbine Company, Wallsend-on-Tyne.]

The Parsons turbine consists of a cylindrical case with numerous rings of inwardly projecting blades. Within this cylinder, which is of variable internal diameter, is a shaft or spindle, and on this spindle are mounted blades projecting outwardly, by means of which the shaft is rotated. The former are called fixed or guide blades and the latter revolving or moving blades. The diameter of the spindle is less than the internal diameter of the cylinder, and thus an annular space is left between the two. This space is occupied by the blades, and it is through these the steam flows. The steam enters the cylinder by means of an annular port at the forward end; it meets a ring of fixed guide blades, which deflects it so that it strikes the adjoining ring of moving blades at such an angle that it exerts on them a rotary impulse. When the steam leaves these blades it has naturally been deflected. The second ring of fixed blades is therefore interposed, and these direct the steam on to the second ring of rotating blades. The same thing occurs with succeeding rings of guide and moving blades until the steam escapes at the exhaust passage. Fig. 1 shows the arrangement of blades.

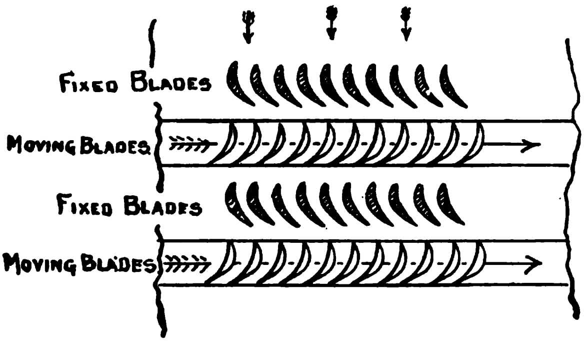

FIG. 1.—BLADES.

Fig. 2 is a cross section showing the arrangement of turbine machinery as adopted in the turbine channel steamer *The Queen*, and which is applicable to most vessels fitted with the turbine system of propulsion. There are three turbines, viz. one high-pressure in the center of the ship and two low-pressure, one on each side of the ship. Each turbine drives a separate shaft, with one propeller on each shaft—three in all. Inside the exhaust casing of the low-pressure cylinders a reversing turbine is fitted. In ordinary going ahead the steam from the boilers is admitted through a suitable regulating valve to the high-pressure turbine, and after expanding about fivefold it then passes to each of the low-pressure turbines in parallel, and is again expanded in them about twenty-five fold and then passes to the condensers, the total expansion ratio being about one hundred and twenty-five fold.

When coming alongside a jetty or maneuvering in or out of harbor, the outer shafts only are used, and the steam is admitted by suitable valves directly into the low-pressure turbines, or alternately in the reversing turbines as may be desired. With this arrangement the port or starboard engines are capable of being worked ahead or astern independently of each other and of the high-pressure turbine (the high-pressure turbine rotating idly in a vacuum while the vessel is maneuvering).

The turbine cross-channel steamer *The Queen* has exceptionally great maneuvering power. On her trial trip on the Clyde, on the 12th of June, when steaming continuously astern, she attained a speed of about 13 knots. Starting and stopping trials were also carried out, and the vessel, when going over 19 knots per hour, was brought to a dead stop in 1 minute 7 seconds after the telegraph order was given to the engine room, and the distance she traveled in this time was equal to only two and a half times her own length.

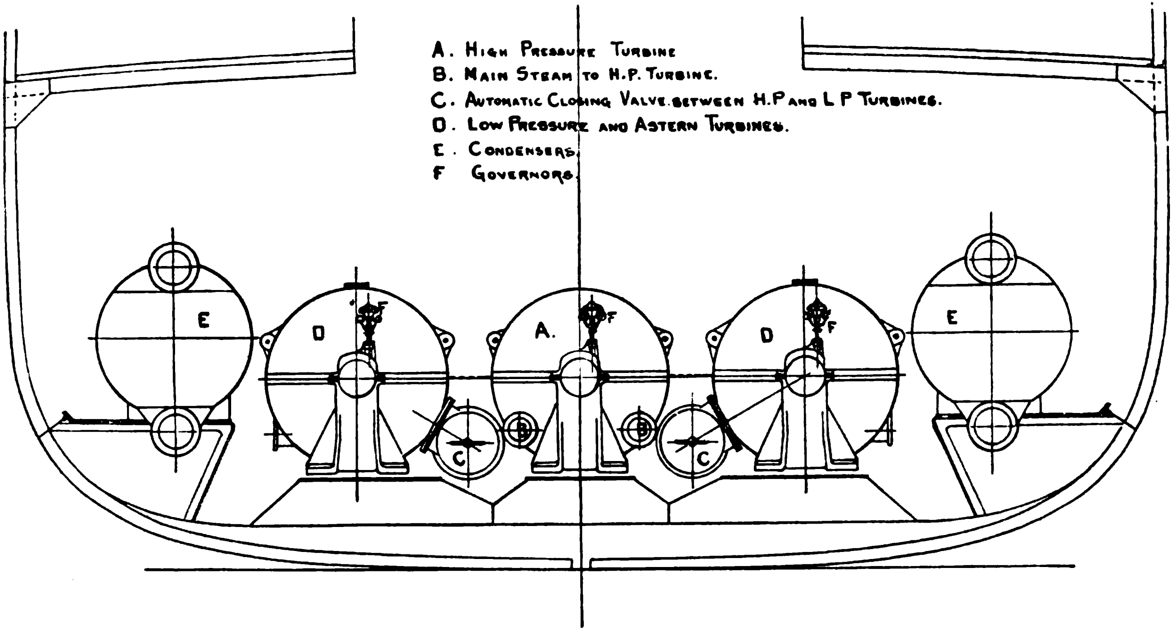
A. High Pressure Turbine
B. Main Steam to H.P. Turbine.
C. Automatic Closing Valve between H.P and L P Turbines.
D. Low Pressure and Astern Turbines.
E. Condensers.
F Governors.
E
D
A.
D
E
F
F
F
B
B
C
C

FIG. 2.—CROSS SECTION OF NEW TURBINE STEAMER, SHOWING END VIEW OF TURBINES.

NEW GALVANIC BATTERIES IN GERMANY.

A new German patent relating to galvanic batteries of the class which is composed of a series or plurality of separate dry cells has been issued. The improvements cover the production of a battery which is capable of being kept in store, of being transported in an absolutely dry condition, and of being rendered fit for use at a moment's notice by the introduction of a suitable liquid or electrolyte into the separate cells constituting the battery. The object aimed at appears to have been secured by certain novel features of construction and combinations of parts.

The dry cells consist each of a zinc or other metallic cylindrical electrode, and of a carbon electrode having a cylindrical or prismatic cross-sectional area placed within the metallic cylinder. The space between the two electrodes is filled up with blotting paper or other suitable material capable of absorbing the electrolyte. A plurality of these cells is arranged within a suitable socket or frame-shaped casing, the cells being separated from each other and the surrounding casing by asphalt or other insulating material. When required for use the covers are removed from the cells and filled up with the blotting paper soaked with any convenient electrolyte, such as ammoniac solution, etc. The covers are then replaced and the battery is ready for use. Insulating rings at the open ends of the cells or zinc cylinders prevent short circuiting of the cells by any overflowing electrolyte.

OLIVER J. D. HUGHES,
Consul-General.

COBURG, GERMANY, *July 17, 1903.*

TESTING A NEW BRAKE IN GERMANY.

A meeting of the commission composed of representatives of the Imperial, Prussian, Bavarian, Saxon, and Baden State railroads was held at Karlsruhe on July 9, 1903, in order to test a new brake, which is known as the Steiner distance brake.

This new invention may be said to be an improvement upon the air brakes now in use. It is so connected with the air brakes of a train that, when the front wheels of a locomotive pass over a danger or halt signal placed upon the tracks, it will automatically put on the brakes, at the same time opening the whistle valve.

The apparatus worked with perfect satisfaction, even at the great speed of 83.75 miles an hour, but because of the extraordinary strain to which it was subjected an important part thereof was broken.

The commission has recommended that an extended trial be given the Steiner brakes upon the regular train service.

BRAINARD H. WARNER, Jr.,
LEIPZIG, GERMANY, *July 15, 1903.* *Consul.*

APPARATUS FOR PASTEURIZATION OF MILK.

I transmit herewith copy of the regulations issued by the Imperial Minister of Agriculture governing an international competition of apparatus for the pasteurization of milk, to be held in this city (St. Petersburg) in the spring of 1904. Russian as well as foreign machines may be sent for trial, the cost of transportation, going and returning, being borne by the inventors or owners. Machines forwarded from abroad will be admitted free of customs duty. Participation at these trials safeguards the right of patenting the apparatus.

It should be remembered that the dates given in the accompanying regulation are "old style."

JOHN MUELLER,
Deputy Consul-General.
ST. PETERSBURG, RUSSIA, *July 22, 1903.*

REGULATIONS.

SECTION 1. The Department of Agriculture organizes in the spring, 1904, beginning the 20th of March at the Imperial Agricultural Museum, St. Petersburg, trials of milk pasteurizers either of Russian or foreign make. No other apparatus allowed except of ordinary size and fully equipped for work. No applications will be received later than February 15, 1904.

SEC. 2. Two premiums will be given by the Department of Agriculture—a great premium of 1,500 rubles ($772.50) and a small one of 500 rubles ($257.50).

SEC. 3. The best of the apparatus, with which no money award has been won, may be distinguished by medals and honorary certificates, awarded in the same way as the above premiums.

SEC. 4. Any award may be granted only for apparatus constructed to answer the requirements of smaller farms or factories (*i. e.*, with a flow of 16 to 20 vedros, or 50 to 60 gallons, of the heated material per hour, provided that the final temperature should be at least 70° C., with the possibility of raising it up to 90° to 100° C.) and acting either with steam, at a pressure not to exceed 0.5 atmosphere, or with heated water.

SEC. 5. Any apparatus may be provided with a special attachment (stirrer) for agitation of the milk heated, requiring no more than a workman's power for putting them in motion, and constructed with all possible simplicity with regard to the convenience of cleaning, removing, and reuniting the different parts, as well as of replacing, by simple means, the spoiled parts by new ones.

SEC. 6. The apparatus must answer the requirements of a pasteurizer as well as of a milk warmer, and have special devices for governing the temperature of heating, not only by means of a milk-passage regulator, but also of a regulator for the admittance of steam or hot water.

SEC. 7. Every apparatus is, besides, expected to be simply and solidly constructed, to be comparatively compact, to have parts capable of being easily replaced by new ones when used up, and to be easily worked, readily knocked down and set up, and easily cleaned or aired.

SEC. 8. The judgment upon the merits of the apparatus is to be pronounced by a jury appointed by the Department of Agriculture and composed of experts in dairying, bacteriology, and agricultural-machine construction, with the participation of representatives of the Ministry of Agriculture and State Domains, farmers, butter makers, etc.

SEC. 9. The trials will be conducted by the jury under condions and surroundings alike to all apparatus, after a preliminary acquaintance with the construction of every apparatus taken apart. Special attention will be paid by the jury to the quality of the material used in manufacture; also a possible estimate of the approximate cost of manufacturing each apparatus will be done.

SEC. 10. Those apparatus which shall appear to the jury to be worthy of award are to be tested practically on farms and in butter factories for a period of one month, and only then will the jury make a final decision as to awarding of the premiums (sec. 2), the medals, and honorary certificates; (sec. 3) which decision is to be presented by the Department of Agriculture for approval of the Minister of Agriculture and State Domains.

SEC. 11. The results of the trials will be given publicity in the periodicals of the Ministry of Agriculture and State Domains.

NEW ARTIFICIAL GUTTA-PERCHA.

A new concern has been started in England, with a branch in Germany, to manufacture artificial gutta-percha under the "Gentzsch" patents and rights.

If the material should indeed realize the eminently satisfactory reports which have so far been obtained, there ought to be a very large market for this product, especially in view of the everincreasing demand and the shrinking supply of the natural product. A well-known European expert is quoted as saying:

> I have recently had an opportunity of seeing some further results obtained by the German post-office with submarine and land cables insulated with this new dielectric, and these results fully bear out the claims made by the inventor for the favorable qualities of his products.

It is especially worth noting that this official report amounts to a complete confirmation of the extremely favorable properties of the new gutta-percha as regards its high insulation resistance and its low inductive capacity. The latter is considerably lower than that of the natural product. The importance of this fact will be better understood when it is remembered that the speed of submarine telegraphic transmission varies about inversely as the capacity of the cable.

OLIVER J. D. HUGHES,
Consul-General.

COBURG, GERMANY, *July 24, 1903.*

ARTIFICIAL PUMICE.

While emery is used for sharpening tools, sand for polishing stones and glass, oxide of iron for fine glass, and chalk and felt for metal ware, pumice is most frequently used for sharpening soft materials. Pumice stone is unreliable, both in grain and hardness. Variations have been noted even in the same piece. This has suggested the idea of replacing it with artificial pumice.

The factory of Schumacher, at Bietigheim, in the valley of the Enz, has been manufacturing an artificial pumice stone out of ground sandstone and clay for some time, and it is interesting to note to what extent this manufacturer has tried to adapt his products to the various purposes for which they are required. There are on the whole ten kinds, differing from each other in regard to hardness and grain, viz: There is (1) a hard and a soft kind with coarse grain, particularly useful in the leather, wax-cloth, felt, and wood industries; (2) a hard and a soft kind with medium coarse grain, suited to stuccoworkers and sculptors and particularly useful for polishing wood before it is painted; (3) a soft, fine-grained stone for the white and dry polish of wood and for tin goods; (4) one of medium hardness with fine grain, for giving the wood a surface for an oil polish; (5) a hard, fine-grained one for working metals and stones, especially lithographic stones; and finally pumice stones with a very fine grain. These artificial stones are used in pretty much the same way as those of volcanic origin. For giving a smooth surface to wood, a dry stone is applied, but to give it a fine polish the stone is dipped in oil. For fine work no coarse-grained and for coarse work no fine-grained stones are used.

OLIVER J. D. HUGHES,
COBURG, GERMANY, *July 17, 1903.* *Consul-General.*

HOUSE-CLEANING DEVICES.

The report from this consulate dated April 25, 1903, and appearing in ADVANCE SHEETS No. 1653 (May 22, 1903), upon a "British house-cleaning device" drew many letters from the United States, and some from England, all being requests for further information or to be put into communication with the company controlling the device, excepting two. The latter came from an American house-cleaning company and contained the information that there was already in existence in the United States a device similar to the one described in my report, contrary to the supposition here, as stated in that report.

It appears from descriptions accompanying the two letters that by the American device, owned in St. Louis, Mo., the dirt is collected in much the same way as by the English process, and that the essential difference between the two systems is that the American device dislodges the dirt in a carpet or other textile substance and forces it into a receptacle by a blast of air under a pressure of about 85 pounds to the square inch, while the English method cleans by suction.

A letter from a London company relative to the American invention informs me that they own the British patents, are doing a large business in London, and are establishing subsidiary companies throughout the provinces. The system is not yet known in Nottingham, and therefore I am unable to give it a personal description, but it would appear from the illustrated catalogue that, excepting the apparatus for generating compressed air, the appliances used are essentially the same as those of the vacuum system described in the report above referred to; that the results are identical in the two systems, except in so far as one may be more efficient than the other, and that the material difference between the two is in the manner in which the air acts upon the article to be cleaned. It is claimed for the American device, however, that it removes grease spots and stains without injuring nap or fabric, and that, after cleaning, disinfectants are blown on the walls and into the carpets by compressed air. I have not observed that similar claims are made for the British system.

FRANK W. MAHIN,
NOTTINGHAM, ENGLAND, *July 13, 1903.* *Consul.*

BRITISH EMPIRE AND PROTECTIVE TARIFFS.

Not only has "the invitation given" to Great Britain "by" its "Colonial Secretary," Mr. Chamberlain, "to take stock of its fiscal policy" been accepted, but in the London Times of Thursday, July 9, there is, in an article on the tin trade of the Malay Peninsula, an announcement in the following words: That "the Government of the Federated Malay States has declared war upon a group of foreign speculators who are backed, it is believed, by some of the greatest names in the world of finance, and to that end has embarked upon a policy of protection." In the Times article it is stated:

> On May 16 the following notification appeared in all the Government gazettes of the Federated Malay States:
>
> "Under the provisions of section 3 of the customs duties enactment, 1898, the resident, with the approval of the resident-general, hereby imposes, as from the 1st day of June, 1903, a duty of $30 per picul (133 pounds) upon all tin ore exported from the State, other than tin ore exported under such guaranties as the resident

may require that it will be smelted in the colony. The duty hereby imposed is to be paid in addition to the duty on tin ore at present in force."

This means that the Colonial Secretary himself—for action of this character would not be taken by a local government without his express sanction—has already in practical fashion initiated the policy of safeguarding local interests from the menace of foreign aggression by means of a protective tariff.

This declaration "of war upon a group of foreign speculators" indicates most certainly "in practical fashion" the tremendous resources for tariff conflict in the possession of the British statesman who, in close touch and exceedingly influential with the great self-governing colonies of Great Britain, is also, while in office, the direct ruler of the Crown colonies of which this Malay group is one, but that there are considerations which are in a sense limitations is pointed out in a card printed in the Times of the same date, written from the House of Commons, July 7, and signed "Alfred Emmott."

This gentlemen believes that there is "immense danger of misunderstandings in the outlying portions of the Empire of the present policy of unlimited inquiry on the question of the present [British] fiscal system." Continuing, he says, in part:

I received by the last Indian mail a copy of the Indian Textile Journal, containing an article on "Intercolonial free trade," in which I find the following, viz:

"The scheme [scheme of preferential tariffs] is full of golden promise for this country. Her cotton industry needs the stimulus to its development which such a fiscal arrangement would give. The free circulation of Indian and Egyptian (why Egyptian?) cottons throughout the Empire, with a tariff charge against America (*sic*) products, would at once restore to India the great wave of prosperity which she enjoyed during the period of the American civil war. Then Bombay alone exported a yearly average of £21,582,847 ($105,032,924), as against £7,460,085 ($36,304,503) exports in 1898–99 from the whole of the Indian Empire. The ryot, being thus assured of a certain and profitable market, would be encouraged to place more land under cultivation, to devote more energy and care to the growth of the plant, and to remedy or, at all events, decrease the admitted defect of shortness of staple."

Now, what does this mean? It means that the writer of the article (the Journal is published in Bombay both in English and in the vernacular) believes Mr. Chamberlain to be in favor of a tax on raw cotton, and in this he may be right—I do not know; but it also means that the author is in favor of a return of the condition of things under which the mills of Lancashire are to be closed in order that India may profit.

When the inevitable discovery is made that no government can live a moment which dares to propose a tax on raw cotton in this country, what will be the effect on the mind of the person who wrote this article and of those natives who have read and believed it? It will be a feeling of bitter disappointment at the raising of hopes which can not be fulfilled, and probably a misunderstanding of the motives and a suspicion of the good intentions of the British Government and people.

The friction that must be engendered by dispelling illusions of this kind will certainly not strengthen the ties that bind the Empire together.

MARSHAL HALSTEAD,
BIRMINGHAM, ENGLAND, *July 13, 1903.* *Consul.*

FOREIGN AND COLONIAL TRADE OF THE UNITED KINGDOM.

The Birmingham Daily Post is printing a series of articles which, it states, "may be accepted as an authoritative exposition of the views held by Mr. Chamberlain on trade preference and reciprocity."

The purpose of the article published to-day—a comparison of foreign and colonial trade—is to show that, large as is the trade of Great Britain with foreign countries, "the colonies are incomparably the best customers for that division of export trade to which prudence bids" Great Britain "assign the higher value," for while "foreign countries take nearly all" of Great Britain's "exportation of raw materials, the colonies take" in very high percentages "far more than their share of manufactured goods." The article, complete (the paragraph relating to the pottery trade will be found to have a great interest to Americans), reads as follows:

FOREIGN AND COLONIAL TRADE COMPARED.

[From the Birmingham Post of July 20, 1903.]

'One principal purpose of Mr. Chamberlain's policy being to enlarge our trade with the colonies, the objection is at once raised that if the colonial trade is enlarged the trade with foreign countries must be diminished, and that, inasmuch as the foreign trade is larger than the colonial, the loss of trade will necessarily be larger than the gain of trade.

It is a rather easy-going logic that infers that a special effort to encourage one section of our trade must of necessity lead to a reduction of the remainder. If a man takes special measures to improve the yield of his flower garden, it does not immediately follow that he must expect a failure of his kitchen garden. Even if we admit the inference, we can not, without protest, allow the aid of the rule of three to be invoked and the assumption to pass that the increase and decrease, respectively, will be exactly proportionate to the volume of trade affected.

This argument, however, forms the stamina of many criticisms of the policy under consideration. To avoid suspicion of misrepresentation, let it be given in the words of Mr. Leone Chiozza: "Our over-sea trade is valued at £800,000,000 ($3,893,200,000), of which £600,000,000 ($2,919,900,000) is transacted with foreign nations and £200,000,000 ($973,300,000) with British possessions. Apart from other considerations, therefore, it is obviously unwise to dislocate three-fourths of our commerce in the endeavor to increase the remaining fourth."

THE FALLACY OF ADDING IMPORTS TO EXPORTS.

These round numbers are obtained by adding together exports and imports and calling the result "trade valued at" so much. Those who are acquainted with the amazing contributions to economical inquiry made by the present secretary of the Cobden Club will not be surprised when Mr. Chiozza informs them that this summary method was "suggested to me by Mr. Harold Cox." To add imports and exports together is always absurd, and generally misleading. It is commonly used to cloak a fallacious argument. If a man who last year earned £600 ($2,919.90) and spent £500 ($2,433.25) added these amounts together and produced £1,100 ($5,353.15), his arithmetic would be excellent, but the total would be meaningless. If a brass founder, having sold £10 ($48.66) worth of doorknobs to a Canadian merchant, and having also bought 20s. ($4.86) worth of Canadian cheese on his way home, were to enter the two transactions together as "dealings with Canada, £11 ($53.55)," the entry would have no statistical value whatever, and the addition would have entirely destroyed any statistical value that belonged to the two separate items.

It should also be evident without argument that this method of lumping everything together conceals differences in real value between different transactions having the same volume in terms of money. When Mr. Chiozza writes "our oversea trade is valued at" instead of "amounts to" £800,000,000 ($3,893,200,000), the substitution of the less-accurate phrase covers a mistake of vast importance. Would any reasonable man, wishing to compare the value—whether to the owners, to the persons employed, or to the nation—of two different commercial undertakings, be content merely with the one datum of the annual turnover? More persons may be earning a livelihood and a larger addition may be made to the national wealth by an undertaking with a turnover of £100,000 ($486,650) than by another with a turnover of £250,000 ($1,216,625).

VALUE DOES NOT VARY WITH VOLUME.

Or, again, there are important differences in value between the exportation of manufactured goods and the exportation of raw materials, or, among raw materials exported, between those which represent the surplus of a harvest or annual yield—*e. g.*, raw cotton, or wheat, or wool—and those which represent a deduction from a store which can not be replenished—*e. g.*, coal or china clay. These differences are neglected so long as we deal with gross totals.

These remarks will suffice to justify the preliminary observation that, in comparing our colonial with our foreign trade, we must take into account the kinds of trade as well as the volume of trade.

COMPARATIVE VALUE OF COLONIAL AND FOREIGN TRADE.

Bearing these things in mind, let us consider the following statistics. They are derived from the Board of Trade returns of British export trade in 1902:

Exports of British and Irish produce and manufactures.

To foreign countries	£174,395,000=	$848,693,267
To British possessions	109,029,000=	530,589,628
Total	283,424,000=	1,379,282,895

Percentage of export trade.

To foreign countries	61.5
To British possessions	38.5
Total	100

The reader is asked to keep these percentages in mind and compare them with the percentage figures given below in respect of the several classes of exports that will be mentioned.

The following table is a classified summary of exports:

Description.	Foreign.		British possessions.	
Living animals	£676,000	$3,289,754	£146,000	$710,509
Articles of food and drink	8,102,000	39,428,383	9,048,000	44,032,092
Raw materials	28,574,000	139,055,371	2,624,000	12,769,696
Yarns and textiles	65,170,000	317,149,805	38,163,000	185,720,240
Metals and manufactures therefrom	23,577,000	114,737,470	19,715,000	95,943,048
Machinery and millwork	11,599,000	56,446,534	7,155,000	34,819,808
Ships, new, not registered as British	4,547,000	22,127,976	1,325,000	6,448,112
Apparel	1,750,000	8,516,375	10,036,000	48,840,194
Chemicals and preparations	6,778,000	32,985,137	2,809,000	13,669,998
All other manufactures	21,295,000	103,632,118	16,309,000	79,367,749
Parcels post	1,805,000	8,784,033	1,673,000	8,141,655
Unenumerated goods	522,000	2,540,313	26,000	126,529
Total	174,395,000	848,693,269	109,029,000	530,589,630

The percentages are as follows:

Description.	Foreign.	British possessions.
	Per cent.	*Per cent.*
Living animals	82	18
Food, etc	47.5	52.5
Raw materials	91.5	8.5
Yarns and textiles	63	37
Metals and manufactures	54.5	45.5
Machinery and millwork	62	38
Ships	77.5	22.5
Apparel	15	85
Chemicals	71	29
Other manufactures	56.5	43.5

THE ESSENTIAL DIFFERENCE.

Even without further analysis the table exhibits at a glance the essential difference between our foreign and our colonial trade—a difference which is, from our point of view, entirely in favor of the colonial trade. Foreign countries take nearly all our exportation of raw materials; the colonies take far more than their share of manufactured goods.

The reasons for regarding the export of manufactures as of more value to us than the export of raw materials are obvious. In the first place, to export raw materials is to export the means by which foreign manufacturers will compete with British manufacturers. This is not given as a reason in itself for prohibiting or even checking such exportation, but it is a reason for assigning less value to this exportation than to exports of manufactured goods. A similar qualification should be made in the case of ships, the exportation of which represents a provision for enabling foreigners to compete with our export trade.

In the second place, speaking generally, a smaller proportion of the value of raw materials is value created by labor; or, in other words, a given amount in value of raw materials means less in employment and wages than the same amount of manufactured goods. This rule has many exceptions, but those exceptions do not apply to our trade. Raw cotton is an exception, for cotton is a crop of which the cost of production is largely labor cost. Only whereas cotton is the largest item in the exportation of material to the United Kingdom from the United States, by far the largest item in our exportation of material to the United States is coal. Coal, coke, and fuel contribute no less than £27,580,000 ($123,848,800) to the £31,198,000 ($151,622,800) value of raw materials in the classified summary.

If England took all the cotton crop this year, the crop could be repeated next year. If we want more cotton, the crop can be increased, more labor employed, and more mouths fed by the export trade. The coal we export is drawn from a store which is limited, diminishing, and irreplaceable. The same consideration applies to pig iron and china clay. Hence the significance of the following statistics of export:

Description.	Value.		Per cent.
Coal, coke, and fuel.			
Foreign	£25,466,000	$123,930,289	92.5
British possessions	2,114,000	10,287,781	7.5
Unmanufactured clay.			
Foreign	475,000	2,311,588	93
British possessions	33,000	160,594	7
Pig iron.			
Foreign	3,270,000	15,913,455	92
British possessions	299,000	1,455,084	8

CASE OF THE POTTERY TRADE.

The mention of china clay suggests a digression which will be pardoned because it treats of a matter of great importance to the North Staffordshire industry.

Exports to the United States of unmanufactured clay and earthen and china ware.

Year.	Unmanufactured clay.	Earthen and china ware.	
	Tons.		
1899	106,692	£656,017	$3,192,507
1900	120,642	602,635	2,932,723
1901	138,909	512,364	2,493,419
1902	155,720	498,338	2,425,162

Between 1892 and 1902 our exportation of china ware to the States declined from 100,506 to 48,198 crates. Thus, America (1) puts a tax of 60 per cent on English pottery, (2) attracts our skilled workmen by the larger wages that are possible under protection, and (3) gets year by year a larger helping of the limited supply of potter's clay; and so a once prosperous industry is approaching starvation point. Having no tariff, we are helpless to check these proceedings.

Such important facts and considerations are studiously concealed by the method of neglecting differences, lumping everything together, adding exports to imports, exhibiting the total, and calling upon us to rejoice in our commercial prosperity. It is an impressive and exhilarating method, but it is not likely to bring much consolation to the Staffordshire potter.

To return to the comparison of foreign and colonial trade. The raw-material class contains only two other items of importance.

Description.	Value.		Per cent.
Undressed wool.			
Foreign	£892,000	$4,340,918	96
British possessions	38,000	184,927	4
Flax and hemp.			
Foreign	178,000	866,237	96.5
British possessions	6,000	29,199	3.5

It is also worthy of notice that the colonies take less than their share of those goods, entered in the manufactured classes, which are material for other manufactures. For example:

Description.	Value.		Per cent.
Yarn (cotton, jute, and linen).			
Foreign	£7,081,000	$34,459,686	81
British possessions	1,694,000	8,243,851	19

It is hardly necessary for the present purpose to add many detailed examples of the comparative trade in special manufactures. The following examples are selected as being of local interest:

Description.	Value.		Per cent.
Galvanized iron.			
Foreign	£1,388,000	$6,754,702	33.5
British possessions	2,745,000	13,358,543	66.5
Cast iron.			
Foreign	447,000	2,175,325	41.5
British possessions	631,000	3,070,762	58.5
Cycles and parts.			
Foreign	234,000	1,138,761	32.5
British possessions	484,000	2,355,386	67.5
Tubes.			
Foreign	450,000	2,189,925	44.5
British possessions	560,000	2,725,240	55.5
Hardware.			
Foreign	719,000	3,499,014	47.5
British possessions	799,000	3,888,333	52.5
Bedsteads.			
Foreign	152,000	739,708	43
British possessions	200,000	973,300	57
Electric-lighting apparatus.			
Foreign	195,000	948,968	31.5
British possessions	423,000	2,058,530	68.5

THE COLONIES ARE OUR BEST CUSTOMERS.

These statistics are sufficient to prove and illustrate the important difference in the prevailing character of our colonial as compared with our foreign trade. The distinction would have been still more marked if protective foreign countries had been taken separately from those eastern and South American countries in which we can still find an open market.

It has been shown that the colonies are incomparably our best customers for that division of our export trade to which prudence bids us assign the higher value.

If, then, we admit the two assumptions of Mr. Chamberlain's critics (1) that the proposed encouragement of our colonial trade will entail a diminution of our foreign trade, and (2) that the decrease will be proportionate to the volume of trade, it by no means follows that the decrease—assumed but unproven—in the total volume of trade over seas will impair its true value to the nation. On the contrary, we find in the statistics a very strong reason in support of the policy of fostering and enlarging our trade with the colonies.

MARSHAL HALSTEAD,
BIRMINGHAM, ENGLAND, *July 20, 1903.* *Consul.*

CHANGE IN CHARACTER OF BRITISH EXPORTS.

In my report of July 20 I inclosed a copy of one of the series of articles on "Trade preference and reciprocity"* which the Birmingham Post is printing as an "authoritative exposition of the views held by Mr. Chamberlain" on this subject. In the article the claim was made that the export trade of Great Britain to its colonies was proportionately more valuable than that with foreign countries because of its character, the colonies purchasing more largely of manufactured goods and buying a smaller proportionate quantity of raw materials, such as coal and other irreplaceable materials. Supplementary to that report, I forward another article to which the caption is given "Change in character of our export trade," and containing statistics intended to demonstrate that British foreign trade has been subject to a change in character which is unsatisfactory, because in export percentages raw materials had increased and manufactured goods decreased, the one "highly significant exception" being machinery—"the equipment of foreign manufactories"—while in import returns "the changes have proceeded in exactly the reverse direction."

The article printed to-day reads as follows:

CHANGE IN CHARACTER OF OUR EXPORT TRADE.

[From the Birmingham Post of July 22, 1903.]

It has been shown that our trade with the colonies is of a more satisfactory character than our trade with foreign countries, because it includes a far larger proportionate exportation of manufactured goods and a far smaller proportionate exportation of coal and other irreplaceable materials.

The following statistics are intended to demonstrate that our trade, regarded as a whole, has recently been subject to a gradual change which is in the same sense and for the same reason unsatisfactory. If this be so, a change in our commercial policy is indicated by the symptoms.

The following calculations of the percentage of different classes of exports and imports to the total value of exports and imports, respectively, are derived from

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* See preceding report, "Foreign and colonial trade of the United Kingdom."

Board of Trade returns. For brevity's sake, the returns of four years out of five will be omitted; those of every fifth year—not selected years, but years taken at regular intervals—will suffice to justify the argument.

CLASSIFICATION OF TRADE.

Exports and imports are roughly classified as (1) food, (2) raw materials, (3) manufactured or partly manufactured goods. In the Board of Trade summaries, tobacco is counted with food. In the following statement living animals—*i. e.*, mostly cattle, sheep, and pigs exported or imported for food—are counted in the food class, although separately classified by the Board of Trade, in order that the tables may be uniform with the German returns that will be given for comparison below. The error so introduced—inasmuch as the class also includes horses and stock cattle—will not affect the conclusions, which depend wholly on the comparison of the classes of raw material and manufactures. It is in any case a slighter error than that of omitting live meat from the count of food stuffs.

British exports.

Year.	Food.	Raw materials.	Manufactured goods.
	Per cent.	*Per cent.*	*Per cent.*
1882	4.7	5.1	90.2
1887	4.5	5.8	89.7
1892	4.9	8.5	86.6
1897	5.7	8.6	85.7
1902	6.1	11	82.9

Here observe (1) the steady decrease of manufactured exports and (2) the steady increase of raw materials (coal, clay, etc.) exported. Observe, further (3), that both the increase and the decrease are most rapid in the two periods 1887-1892 and 1897-1902. This completes the proof that the phenomena are correlated. The law is, the more of our raw materials we sell to foreigners the less of our manufactures they buy from us.

KINDS OF MANUFACTURED GOODS.

The classification of manufactured goods in use is:

(*a*) Yarns and textiles.
(*b*) Metals and articles manufactured therefrom, except machinery.
(*c*) Machinery and millwork.
(*d*) Apparel and articles of personal use.
(*e*) Chemicals.
(*f*) Miscellaneous.

Under this classification the percentages are:

Year.	A.	B.	C.	D.	E.	F.
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
1882	46.5	18	4.9	5.1	3.1	12.6
1887	48.9	15.8	5	4.6	3.1	12.3
1892	44.1	14.6	6.1	4.6	3.8	13.4
1897	41.2	14.7	7	4.2	3.6	14.9
1902	36.4	15	6.6	4.3	3.4	17.2

The great falling off has been in the exports of textiles, but it is also considerable in metal manufactures. On the other hand, machinery—that is, the equipment of foreign manufactories—supplies a highly significant exception, showing an increase instead of a decrease.

THE IMPORT RETURNS.

Now let us bring into comparison the corresponding statistics of importation. It will be noticed that the rows in the following table, if cast up horizontally, come to less than 100. The difference represents a small miscellaneous class, varying from 3.4 to 3.8.

Year.	Food.	Raw materials.	Manufactures.
	Per cent.	*Per cent.*	*Per cent.*
1882	43.7	40.2	12.5
1887	42.1	39.3	15
1892	44.4	36.5	15.4
1897	42.9	34.8	18.9
1902	42.5	35	18.7

Here we find that the changes have proceeded in exactly the reverse direction. The importation of manufactured goods is on the up grade; that of raw materials is declining.

THE TRADE OF GERMANY.

A most significant contrast is afforded by the similar statistics of the German Empire. These will also be given at intervals of five years. The years do not exactly correspond, as the statistics for 1901 and 1902 are not yet to hand.

Year.	German imports.			German exports.		
	Food.	Raw materials.	Manufactures.	Food.	Raw materials.	Manufactures.
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
1880	32.6	39.6	27.8	22.1	20.2	57.7
1885	30.3	41.2	28.5	18.5	18.6	62.9
1890	33.5	42.9	23.6	14.2	21.3	64.5
1895	33.7	43.8	22.5	12.5	21.8	65.7
1900	30.6	48.6	20.8	11.2	24.1	64.7

It would surely be the most willful sort of blindness to refuse to connect this unsatisfactory development of English trade, coinciding with a satisfactory development of German trade, with the strongly contrasted commercial policies of the two Empires.

A SIGNIFICANT COMPARISON.

Here are some more statistics that tell the same tale and point the same moral:

Exports of manufactured goods.

Country.	1883.		1890.		1901.	
United Kingdom	£215,000,000	$1,046,297,000	£230,000,000	$1,119,295,000	£222,000,000	$1,080,363,000
United States	28,000,000	136,262,000	31,000,000	150,861,500	86,000,000	418,519,000
Germany	98,000,000	476,918,000	107,000,000	520,715,500	145,000,000	705,642,500

Thus, in eleven years British manufactured exports decreased by 3.5 per cent; American manufactured exports increased by 174 per cent; and German manufactured exports increased by 35.5 per cent.

The imports of manufactured goods into the United Kingdom in the three years in question were as follows:

1883	£53,000,000=$25,924,500
1890	63,000,000=306,589,500
1900	93,000,000=452,584,500

As imports rise, exports are falling.

THE FAILURE OF A THEORY.

These statistics also illustrate once more the failure of the predictions of the extreme school of laisser-faire economists. Undeterred by failure, they still go on prophesying—just as a sporting prophet, whose selection for the Derby was nowhere on Wednesday, is as confident as ever Thursday that he knows what will win the Oaks on Friday.

In 1878 the late Professor Fawcett published a very lucid and powerful defense of free trade against reciprocity. His arguments are for the most part a priori, or deductive, but occasionally he condescends to statistics. The result is, to a well-informed reader of to-day, quite ludicrous. If we substitute the most recent returns (those of 1902) for the returns cited by Mr. Fawcett (those of 1877), it will be found in nearly every case that the inference drawn is exactly reversed.

For example, Mr. Fawcett wrote: "In the year 1877, when the iron trade was most inactive, the entire quantity of iron and steel, manufactured and unmanufactured, imported into England amounted to only £2,515,034" ($12,239,412). This importation, even excluding iron ore, amounted last year to £7,988,519 ($38,876,-127); and the inference fails. "With regard to Belgian iron competing successfully against English iron in our own market, so little reason is there to suppose our trade can be so injured that the value of the iron exported from Belgium to England in 1877 exceeded by only £210,724 ($1,024,488) the value of the iron exported from England to Belgium. It therefore appears that the Belgian ironmasters have nearly as much to fear from the competition of England as the English ironmasters have from the competition of Belgium." To-day this excess is nearly £2,500,000 ($12,166,250), and the importation from Belgium is more than six times the exportation to Belgium.

Then follows the generalization: "No single case can be brought forward in which English trade suffers to any appreciable extent by foreign products underselling in our own markets the same articles of English manufacture." We may safely accept Mr. Fawcett's word that this was true twenty-six years ago. But who is bold enough to repeat the assertion to-day? Any reader of this paper could adduce not a single case merely, but many examples of trades ruined in the way that Mr. Fawcett thought impossible. Or again, he remarked that the value of all the exports from the United States to England, excepting articles of food and raw produce, amounted to the "comparatively trifling" sum of £2,578,000 ($12,545,837). Last year they amounted to about £13,000,000 ($63,264,500).

Let not the purpose of these citations and corrections be misunderstood. It is certainly not to make a point against an economist and politician whose name must always be held in high esteem by Englishmen. It would be absurd to blame Mr. Fawcett, who dealt honestly with the conditions of his own time, for not foreseeing the conditions of our time. If he wrongly conceived that those conditions were immutable, when in fact they were changing, that is the commonest error of fallible human judgment. He had a theory. He tested the theory by the facts to which he had access and found it justified. We in our turn test the theory by a new set of facts and find it wanting. What the citations do prove is this, at least: That Mr. Balfour is absolutely right when he declares that the conditions of trade have so altered during the past twenty years that a reconsideration of commercial policy is imperative. Indeed, that opinion must seem the merest common sense to anyone but a theoretical economist fighting for an ancient creed with the zeal of defiant orthodoxy.

In further illustration of the argument, a few examples are appended of British manufactures injured by foreign competition. The test applied is that suggested and employed by Mr. Fawcett, viz, a large excess of importation over exportation of the same class of manufactured goods. It can not, however, be admitted that this test discloses every case. It does not reveal the worst cases—those in which exportation is either entirely destroyed, or has become so small that it is not separately recorded by the Board of Trade, but included in a mixed class. For example, last year we imported £1,145,000 ($5,572,142) worth of house frames and other joinery. There is no similar entry in the export returns. If there was any exportation it is included under "Wood manufactures, unenumerated," of which the total value was only £376,901 ($1,834,184). The statistics are in every case taken from the Board of Trade returns for 1902. Where possible quantities, in other cases values, are given;

Article.	Imports.		Exports.	
Paper and paper goods..........cwts...	6,470,951	....	1,081,823	....
Brooms and brushes..........dozens...	1,309,129	....	347,306	....
Glass and glassware..........value...	£3,696,992	$17,991,411	£1,097,930	$5,343,076
Cotton hosiery..........do......	£832,702	4,052,344	£457,742	2,227,601
Motor cars and parts..........do......	£1,103,065	5,368,066	£172,143	837,734
Leather..........cwts...	1,198,864	....	127,425	....
Musical instruments..........value...	£1,368,911	6,661,805	£264,190	1,285,680
Zinc, manufactures of..........tons...	21,374	....	1,324	....
Clocks, watches, and parts..........value...	£1,690,086	8,224,803	£101,657	494,713

To avoid misapprehension, it may be well to define the purposes for which these returns are cited. They prove in the first place that the conditions of our manufacturing industries have vastly changed since Mr. Fawcett made the observation quoted above. In the second place, they disprove a favorite position of the school of economists that refuses to be taught by experience—the position that protected countries can not compete in foreign markets with free-trade countries because protection raises the cost of living and therefore the rate of wages.

MARSHAL HALSTEAD,
Consul.

BIRMINGHAM, ENGLAND, *July 22, 1903.*

CANADIAN IMPORTS AND EXPORTS FOR 1903.

I transmit herewith an article showing the exports and imports of Canada compiled from a report just issued from the department of customs at Ottawa, which should be of interest to the Department of Commerce and Labor.

CHARLES DEAL,
Consul.

ST. JOHN'S, QUEBEC, *July 23, 1903.*

CANADIAN TRADE EXPANSION.

[Special to the Montreal Herald.]

The unrevised figures of foreign trade for the fiscal year ended June 30, 1903, show an enormous expansion in the trade and commerce of the country. It amounted to no less than $467,637,049, an increase of $43,750,000 over the trade of 1902.

On the basis of imports which actually entered into consumption and Canadian produce only, exported, the trade for the year amounted to $448,188,999, as compared with $398,811,358 for the previous year, or an increase of $49,377,641. On this basis our trade has more than doubled in the last seven years, as appears from the following figures:

1903	$448, 188, 999
1896	220, 502, 817

It may be interesting to note at this point that our foreign trade in imports entered for consumption and domestic produce exported amounted to about $1,500,000 per working-day last year, whereas in 1896 it was about $730,000 per working-day.

Exports of domestic produce.

The exports of domestic produce for the year totaled $214,401,674. This is an increase of $18,381,911 over the previous year, and nearly double the domestic exports for the year 1896, when they amounted to $109,915,337.

The exports of animals and their products and the produce of the farm figured up to $114,441,863, compared with $96,313,897 for the previous year. In 1896 they only amounted to $50,591,002. In the last seven years, therefore, such exports have increased by about 130 per cent.

The exports of the produce of Canadian forests show an increase of $4,000,000 for the year, the total amount being $36,386,015. This is an increase over 1896 of $9,000,000.

Exports of manufactures.

It is also very gratifying to find that the exports of manufactured articles produced in Canada continue to increase in generous proportions. Last year they totaled $20,624,967, as against $18,462,970 for the previous year. In 1896 they only amounted to $9,365,384.

Free imports.

The free list, which largely comprises raw material for manufacturers, shows a remarkable expansion in imports, thereby indicating great activity in manufacturing circles. In 1903 the free goods imported, less coin and bullion, amounted to $88,023,738, an increase of $10,000,000 over the previous year and of $50,000,000 over 1896.

As an evidence of the increase in the importations of raw material, the following items might be cited:

Raw cotton was imported in 1903 to the extent of 67,652,145 pounds, whereas in 1896 the importations amounted to only 33,479,358 pounds.

The value of raw hides and skins imported for the use of tanneries last year was $5,661,334, as compared with $1,945,914 in 1896.

More than 1,000,000 tons more bituminous coal was imported into the country last year for manufacturers than in 1896.

Crude rubber was imported last year to the amount of $1,532,998, as against $852,095 in 1896.

Exports per capita.

The exports of Canadian produce for last year were $37 per head. For the year 1902 the exports per capita in the United States were only $18.

Our total trade last year, estimating our population at 5,750,000, was $81 per head; that of the United States in 1902 was $31 per head.

GERMAN EXPORT OF BICYCLES.

The export of bicycles from Germany shows a remarkable increase. It amounted in the first half of this year to 1,424 tons, worth $2,380,000, against 1,112 tons, worth $1,832,000, in 1902 and 1,118 tons, worth $1,642,000, in 1901. It has therefore exceeded the American as well as the English export. The most important consumers of German bicycles, together with the duties which are levied on machines therein, calculated ad valorem, are given below for the first half year of 1901 and 1902:

Country.	Duty.	Export in first half year of—	
		1901.	1902.
	Per cent.	*Dozen.*	*Dozen.*
Belgium	12	741	854
Denmark	10	1,352	1,932
France	12	447	911
Great Britain	Free.	1,099	1,696
Italy	16	465	497
Netherlands	5	1,492	2,575
Norway	12	191	150
Austria-Hungary	25	1,331	1,647
Russia	19	1,074	1,092
Sweden	15	1,144	751
Switzerland	4	1,125	1,330

Of the above-mentioned States, Austria-Hungary levies the highest duty. In Germany the present duty on bicycles amounts to only 24 marks ($5.71) for 220 pounds, or, taking the value of the machine at $47.60 and estimating eight machines to 220 pounds, only 1½ per cent duty ad valorem.

According to the pending tariff bill, the German duty will be raised to 150 marks ($35.70) for 220 pounds, which will amount approximately to an average duty of 10 per cent ad valorem.

JAMES H. WORMAN,
Consul-General.

MUNICH, GERMANY, *July 28, 1903.*

RUSSIAN EXPORTATION EFFORTS.

"Export, export, at any cost!" This, says the Moscow correspondent of the Russian trade paper Commerce and Industries, is the cry of the Russian industrial syndicates. Of late these have shown a strong tendency not only to increase the export of Russian textiles and metallic ware to Asia, but they are preparing to invade the European markets and compete in transoceanic countries which are now supplied by the United States and Europe. To promote this object, Russian syndicates will participate in the coming World's Fair at St. Louis, and will make a fine exhibition of their products. This aggressive move is discussed by the official newspaper of the German-Russian Association at Berlin, as follows:

> The Russian cotton-textile branch is chiefly engaged in this export movement, which receives strong support from the grant of a Government premium and the additional bonus of the drawback of the customs duties on foreign cotton manufactured into textiles in Russia, which drawback is obtained when the articles manufactured from such imported cotton are exported to foreign countries. The cotton textiles made in Russia have already gained great popularity in Asiatic markets, notably in Persia, pushing out the English product.
>
> Efforts to push exportation of products of the iron industries, especially of agricultural implements, are also being made.
>
> The Russian Pacharj Iron Works is now manufacturing for export a new type of plow which is similar to a plow made and used in France and now sold there at 300 francs ($57.90) each. The Pacharj Works will deliver said plow in France at the price of 150 francs ($28.95) and bear the importation-tariff charges themselves.
>
> Other agricultural implements of the most modern type made by the Pacharj Company have been practically tested at an exhibition lately held in St. Petersburg in the presence of the Emperor and the Ministers of State for Agriculture and Finance.
>
> The Russian Government takes an immense interest in the promotion of Russian industries, and sustains, by liberal monetary grants, transportation facilities, and various other means, the efforts to extend the exportation of Russian products.

SIMON W. HANAUER,
Deputy Consul-General.

FRANKFORT, GERMANY, *August 4, 1903.*

PRODUCTS AND EXPORTS OF JAVA.

A German trade journal recently devoted considerable space to the foreign commerce of Java and the latter's trade relations with the German Empire. I give herewith a résumé of the article, as of interest to our own traders:

Coffee.—The coffee culture is on the wane and it is not impossible that in the course of time it may be given up entirely. The reasons for this are exhaustion of the soil and the competition of Brazilian coffee.

The Government, which causes coffee to be grown on its own account, sells yearly at auction at Batavia about 100,000 piculs (13,330,000 pounds); the balance is brought to Holland, where it is sold for the account of the Government. Many private planters also send their crops on consignment to Holland. The direct trade with Germany is very unimportant, while Austria, France, and Scandinavia buy large quantities of fancy qualities directly. Large quantities of Java coffee reach Germany via Holland, German coffee merchants paying two or three middlemen's profits rather than run the risk of direct importation.

Sugar.—This is the chief article of production and export of the island, nearly 880,000 tons being exported yearly. While the sugar industry is not very flourishing under the present market prices, it is nevertheless able to hold its own in the competition of the world. In Germany, as well as throughout the Continent, cane sugar plays only an insignificant rôle in the sugar trade since the development of the beet-sugar industry has become so marked.

Rice.—Java does not export rice in any great quantities, although enormous stretches of country are devoted to its cultivation. Rice constitutes the main food of the natives, and only small quantities of the very finest grades, which are too expensive for native consumption, are exported, chiefly to Holland.

Arrack.—This product is regularly shipped to Holland, whence it is distributed to other countries. Scandinavia is a chief consumer of arrack, in which country it is used in making up punches.

Chair cane.—Of all articles of export from Java, Germany gives this the most attention and imports large quantities directly; besides, large quantities are shipped via Singapore and Holland which ultimately reach the German markets. Java itself produces only the inferior grades of cane, while the finer and medium grades come from Sumatra, Borneo, and the Celebes.

Pepper.—In days gone by Java cultivated pepper to a considerable extent, but gave it up years ago. Latterly, the high prices this condiment commands has caused planters to turn to its cultivation again, and Java will once more play a rôle as a pepper-producing country. At present pepper is cultivated in the Lampong districts of West Sumatra, while the so-called Singapore pepper is grown in the northeast provinces of Sumatra. Indirectly, Germany imports pepper from Java via Holland or Singapore, chiefly via the latter route.

India rubber.—This article of commerce is produced and exported only in small quantities, although the quality is, as a rule, excellent.

Hides.—Hides play an important rôle in the export trade of Java. Buffalo hides are well prepared, so that in quality they are better than those of British India and the other islands of the East Indian Archipelago. These hides are exported to Amsterdam, whence they go in large quantities to Germany. The poorer qualities find their way via Singapore to England, where, under the name of "Singapore buff," they are known as an inferior article. Hides of cattle are also exported and are of good quality, being on the whole thinner and more tender than European cattle hides. All hides are well stretched and sun dried; other preservatives, such as salt, are not used.

Goatskins.—The export of goatskins has become very important during the past fifteen years and amounts to more than $500,000 per annum, although the official statistics show a much smaller figure, owing to the low value placed upon the skins in computing the export duty. The United States is the best customer for goatskins, even the greater part of the large quantities of skins consigned to Amsterdam finding its way thither.

Tobacco.—This product of Java is much inferior to that of Sumatra; it is exported mainly to Holland and thence partly to Germany.

Indigo.—The cultivation of the indigo plant is, as elsewhere, on the wane. This is due to the competition of the chemical product, which is manufactured—especially in Germany—in very large quantities, the planters being unable to meet the price of the artificial product.

Kapok.—Kapok, the Java cotton, is finding ready markets throughout the world, especially as a filling for mattresses. Owing to this increasing demand, more attention is being paid to the rational culture of the kapok tree. At first kapok was only sent in consignments to Holland, but now, for some years past, Australia has become a ready buyer, and more recently the United States and Scandinavia have shown interest in this product.

Tea.—Java tea is of a strong, palatable quality. While formerly this article was exported almost exclusively to London, England, and latterly also to Holland, it is now also being exported directly to Germany.

Cinnamon.—The best customer for this product is the United States. Even those consignments which are shipped to Singapore go eventually to the United States, while Germany buys very little Java cinnamon.

*Tin.**—Of the tin-producing countries the Netherlands colonies in the Indian Ocean rank second in importance. Practically all the tin produced in these islands is consigned to Holland and forms an article of speculation on the Amsterdam exchange.

Peruvian bark.—Since a quinine factory has been established in Bandoeng, Java, growers of peruvian bark are prospering. Formerly, a European syndicate of buyers of the raw product depressed prices to suit their interests, thereby realizing an enormous profit on the finished drug.

Copra.—Copra, the dried meat of the cocoanut, is exported chiefly to Marseilles, but quantities of this product are also shipped to Genoa and, via Holland, to Belgium and some parts of the German Empire. There is also a direct export trade in this article with Hamburg.

Cocoa.—The culture of the cocoa tree is still in its infancy, but, owing to the growing demand for the cocoa bean and the fact that both climate and soil of Java are most excellently adapted to the cocoa culture, it is most probable that in the near future large plantations may be devoted to this product.

Cubeb.—There is hardly an article of commerce which has been subject to such fluctuations in price as this. Fifteen years ago $120.60 for 135 pounds was realized for this drug; the present market price is hardly 5 per cent of that.

Paraffin.—Paraffin, a by-product of the petroleum industry of Java, is exported mainly to Holland and Marseilles, where it is manufactured into candles.

Tapioca.—Tapioca, the pure flour of the tapioca root, is manufactured chiefly in Bandoeng. While England is a good customer for this product, the bulk goes to Amsterdam on consignment.

Teak wood.—This is of excellent quality, and the export business in this wood is constantly growing. It goes chiefly to Holland, England, and France.

Java hats.—These, made from a special kind of bamboo, are shipped in large quantities from Batavia to Europe and America. About 500,000 hats are exported annually, mainly to France, England, and the United States.

Vanilla.—While the quality is inferior to Mauritius and West Indian vanilla, this is due only to the method of preparation, the climate and soil being well adapted to the culture of the vanilla bean.

WALTER SCHUMANN,
Consul.

MAINZ, GERMANY, *July 23, 1903.*

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*See "Tin production of the world" in ADVANCE SHEETS No. 1717 (August 7, 1903).

FOREIGN TRADE OF SIAM.

The foreign trade of Siam in 1902 aggregated $27,692,000* in value for goods imported and $37,582,000 for goods exported.

Value of the chief items of export.

Rice and rice flour	$30,215,000
Teak wood	2,795,000
Salted fish	645,000
Pepper	430,000

Value of goods imported.

Cotton breechcloths, shawls, bleached and brown shirtings, calicoes, and yarns	5,031,000
Ready-made clothing	473,000
Jute bags	1,247,000
Machinery (mainly for cultivating and grinding rice)	817,000
Ironware, cutlery, iron and steel plates and sheets, brass, and other articles composed of metal	1,075,000
Provisions	1,612,500
Opium	860,000
Sugar	860,000
Petroleum and other oils	903,000
Gold leaf	752,500

Besides these articles, the importation of drugs and chemicals, dyes and colors, cement, tobacco and cigars, hats and caps, and straw and bamboo matting represent very respectable sums, varying from $130,000 to $430,000 each.

SIMON W. HANAUER,
Deputy Consul-General.

FRANKFORT, GERMANY, *August 3, 1903.*

COMMERCE OF GERMANY IN 1903.

The exports of German goods for the first six months of 1903 show an increase, both in quantity and value, as compared with the same period of 1902 and 1901, while compared with 1900 and 1899 a considerable reduction in value is apparent. The increase in value (precious metals included) over the previous year is estimated at 187,000,000 marks ($44,506,000) in round numbers. The imports have not increased in quantity quite as much as the exports, but the value increase is larger.

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* The above values are calculated on the gold value of the tical at 43 cents to the dollar.

The following table gives the imports and exports for the first six months of the last five years:

Year.	Exports.		Imports.	
	Quantity.	Value.	Quantity.	Value.
	Tons.		*Tons.*	
1903	18,303,199	$573,663,300	21,723,916	$730,257,780
1902	15,789,131	529,183,480	19,661,309	675,710,560
1901	15,048,869	508,372,760	20,768,497	654,973,620
1900	15,867,060	711,917,500	20,250,396	553,659,400
1899	14,600,351	678,614,160	20,391,436	498,276,280

The imports of the following articles amounted to more than 100,000,000 marks ($23,800,000) each:

Article.	Quantity.		Value.	
	1903.	1902.	1903.	1902.
	Tons.	*Tons.*		
Cotton and cotton goods	268,082	232,152	$70,174,300	$56,603,540
Drugs, apothecary goods, and dyestuffs	655,564	655,656	33,655,580	33,774,580
Earths, ores, precious metals, etc	3,980,028	3,215,721	38,275,160	32,798,780
Cereals	3,362,780	3,073,617	111,976,620	103,325,320
Skins and hides	72,405	61,860	35,804,720	31,123,260
Wood and other carving material	2,186,137	1,788,750	31,168,880	26,777,380
Groceries	714,037	721,286	81,110,400	81,341,260
Oils and fatty substances n. o. s	412,958	411,536	31,656,380	32,118,100
Silk and silk goods	3,879	3,693	23,876,160	23,547,720
Animals and animal products	102,591	100,673	23,852,360	23,423,960
Domestic animals	124,940	101,485	27,317,640	23,611,980
Wood and wooden goods	153,090	153,252	72,144,940	68,467,840

The following tariff groups of exports amounted to more than 100,000,000 marks ($23,800,000) each:

Article.	Quantity.		Value.	
	1903.	1902.	1903.	1902.
	Tons.	*Tons.*		
Cotton and cotton goods	62,999	55,644	$44,927,260	$38,160,920
Drugs, etc	472,854	416,002	45,610,320	42,830,480
Iron and iron wares	1,830,801	1,503,742	78,625,680	67,387,320
Instruments, machinery, etc	132,536	125,229	30,261,700	30,314,060
Groceries	908,301	982,553	35,038,360	38,708,320
Coal, etc	9,891,319	8,412,739	33,479,460	28,155,400
Wool and woolen goods	41,086	39,278	41,264,440	39,427,080

RICHARD GUENTHER,

FRANKFORT, GERMANY, *July 30, 1903.* *Consul-General.*

COTTON-MANUFACTURING INDUSTRY OF AUSTRIA.

TARIFF UNCERTAINTY.

Owing to the prevailing uncertainty and apprehensions of a tariff separation between Austria and Hungary (which latter country was a province of Austria only thirty years ago), the Hungarian market, upon which the Austrian cotton mills greatly depend, continues in a state of jeopardy. Hungary had, up to within a few years, no textile industry of its own and it has been supplied almost entirely by the Austrian manufacturers. The large agricultural population of Hungary is poor, and therefore consumes large quantities of cotton goods. Considering these unfavorable circumstances, it is the more remarkable that the Austrian cotton industry yet retains a prominent position in the world's market.

COTTON CONSUMPTION.

The bulk of cotton used is imported from the United States, while only a small percentage of East Indian and Egyptian cotton finds a way to this market. During 1902 the total consumption of cotton in Austria amounted to 140,000,000 kilograms (318,644,000 pounds), of which fully 100,000,000 kilograms (220,460,000 pounds) were American. The cotton is shipped from the United States direct to Bremen or Hamburg, and thence forwarded by rail or on the River Elbe to its place of destination.

No cotton is grown in this Monarchy, all attempts to raise it, including recent experiments in Hungary, having signally failed.

COTTON MILLS.

Spinning mills.—As regards the cotton mills, Bohemia counts the greatest number of spindles, so that the largest portion of cotton imported remains in Bohemia. The mills manufacture chiefly the coarser numbers of yarns—Nos. 20 to 30 and below, and Nos. 36 to 42, while numbers over 60 are produced to a very small extent; qualities over No. 80 are generally imported from England and Switzerland.

The official returns for 1902 give the following number of spindles in operation: Bohemia, 1,750,000; total for Austria-Hungary, 3,128,000.

The import and export of yarns is comparatively of little importance, excepting the finest numbers, which are regularly imported.

Weaving mills and looms.—The weaving establishments turn out ordinary calicoes, Jacquard ware, fancy weaves, and other colored goods, which are fully up to the modern standard. The number of looms is about 110,000, of which about one-half are in Bohemia. The various automatic looms are little known in this country so far. The Drapers-Northrup looms are not much used in weaving establishments; a few may be found, but so far only for experimental purposes. There are very limited imports or exports of woven products; only the finest goods are imported from foreign countries.

Finishing.—Respecting the finishing industry, the bleaching and laundry establishments, and in connection therewith the shirt and collar factories, are in a state of great efficiency, and the last-named industry is extending its trade with all parts of the world, Singer's latest improved sewing machines being in general use.

Dyeing and printing.—Dyeing and printing works are also fitted up with modern appliances, and if the export of these goods is not of any moment it is due to the unfavorable tariffs, which increase the cost of dyeing material, etc. The number of printing machines in operation is estimated at about 150, of which about one-half are in Bohemia.

HOURS OF LABOR.

The daily working hours in these industries vary between ten and one-half hours and eleven and one-half hours. Some of the printing establishments in eastern Bohemia run their works day and night, which is not generally approved of, particularly by those works that keep regular hours, as the market in consequence is apt to be glutted, and that often with inferior goods.

WAGES.

Wages paid to regular hands in the cotton mills vary from 3 to 5 crowns (61 cents to $1.02) per day, while the assistants receive proportionately smaller pay. The wages of the weavers are comparatively less; even in districts where the highest wages are paid they will hardly earn more than 3 crowns (61 cents) per day, while in the calico establishments in eastern Bohemia they get scarcely more than 2 crowns (41 cents) per day. Of course, in cases where a weaver serves four looms, or where particularly skilled hands are required—as, for instance, for Jacquard looms, etc.—the pay is considerably higher. Those employed in the printing establishments form two distinct classes, viz, professionals—such as engravers, printers, etc.—who command even up to 10 crowns ($2.03) per day, and ordinary laborers, who get only 2 crowns (41 cents) or a trifle more.

ETHELBERT WATTS,
Consul.

PRAGUE, AUSTRIA, *July 22, 1903.*

COAL INDUSTRY IN BOHEMIA.

This important industry has suffered in the past two years in sympathy with the iron and steel and other great industries in this country, the effect being most depressing upon miners of brown coal, which exists in large quantity and is most extensively mined, largely from open cuts, from which drifts are run (very much as hematite iron ore is mined in the United States), and is frequently found within a few feet of the surface. The brown-coal districts are known as the Dux-Brüx-Komotau and the Falkenau-Elbegen districts in the north and west of Bohemia. The output during the years 1899, 1900 (two-months' strike), 1901, and 1902 was 17,900,000 tons, 17,300,000 tons, 18,300,000 tons, and about 18,000,000 tons, respectively.

The following table shows the export and home consumption:

Year.	Export.	Home consumption.
	Tons.	*Tons.*
1899	8,500,000	9,400,000
1900	7,700,000	9,600,000
1901	8,100,000	10,200,000
1902	7,400,000	10,060,000

The depression was not so much felt on account of the reduction of the output as in the decline in prices of brown coal, which amounted to from 8 to 10 hellers (1.6 to 2 cents) per 100 kilograms (220 pounds), whereas the cost of production was not reduced in proportion, the concessions made to the miners during their last great strike about four years ago being maintained, as well as the nine-hour day adopted last year. This latter change affecting the output to the extent of about 6 to 10 per cent, prices of brown coal vary very much according to quality. The best commands from 5 to 7 crowns ($1.01 to $1.42) per 1,000 kilograms (2,204 pounds), while the inferior quality will not bring over 3 to 4 crowns (61 to 81 cents).

Black or hard coal (so called), resembling somewhat American semibituminous coal, is found and mined to a much more limited extent in this country in the Pilsen and Kladno districts. The yearly production in the former district is about 796,500 tons and in the latter about 1,027,925 tons, exclusive of that consumed by ironworks, etc., in this district, showing a total for Bohemia of 1,824,425 tons. The black coal is much superior in heating power and in other respects to the brown coal and commands a much higher price. The higher grades command from 15 to 20 crowns ($3.05 to $4.06) per ton, according to quality, and the lower grades and sizes from 12 to 14 crowns ($2.44 to $2.84). The black coal is used by the wealthier class for domestic purposes, as the brown coal gives off very dense and unpleasant smoke and soot. For manufacturing purposes both are used, sometimes mixed, but the brown coal, of course, to the largest extent; both are exported, principally to Germany, Switzerland, and Italy.

The wages paid in the coal districts of Bohemia, per nine-hour shift, are as follows:

Class.	Wages.	
	Crowns.	
Pick men	5.00	$1.02
Carpenters	3.60	.73
Enginemen	3.40	.69
Other men working in pits	4.00	.81
Overseers	4.50	.91
Workmen at pit's mouth	3.50	.71
Boys	2.00	.41
Women	1.55	.31

The pick men are paid by the job; all others are paid by the day. The labor day of all miners is nine hours, including the going in and out. The men at the pit's mouth work twelve hours, with two hours' rest at midday.

ETHELBERT WATTS,
Consul.

PRAGUE, AUSTRIA, *July 22, 1903.*

GERMAN TOY INDUSTRY.

The toy industry of the Erzgebirge, or Ore Mountains, which has been developing for centuries, has been slowly drifting into economic difficulties. With the application of steam power and modern machinery to the production of toys the house industry has been gradually forced to the wall. With an increase in the price of wood and a decrease in the price of the finished product, these people of the mountains have been put into a position where it is necessary to toil night and day for a meager existence, which is apparently becoming more and more severe.

For some years the labor press of this part of the country has busied itself with a portrayal of the wretched conditions existing among the peasants of the mountains, with the result that an investigation was recently made by the industrial commission of Freiburg, which largely substantiates even the strong representations of the

Google

labor organs. The main points of the report of this commission may be summarized as follows:

The number of large establishments engaged in the manufacture of toys is increasing. This might be considered prima facie as a welcome sign were it not for the fact that the toys are not manufactured upon the regular factory plan with hired hands, but are made by men who have rented space and machines quite independently of one another, and who form a sort of voluntary association banded together only for the sake of economy in roof and equipment, but carrying on their own separate businesses. A disinclination is said to prevail among the young men to enter a factory on the basis of wage-earners and be subjected to the immediate control, supervision, and direction of an employer. Rather than earn the higher income afforded by the factory wage the young men in the hills prefer a much more meager existence in the independence and freedom of their own homes. Because of the fact that the inhabitants of the mountains make but few and simple demands upon life, the real wretchedness of their situation is said to be but rarely fully appreciated.

The wage conditions existing in the toy industry can be readily observed from the following figures prepared by the commission referred to. The most remunerative branch of the trade affords a gross income of from 24 to 40 marks ($5.71 to $9.52) per week, one-half of which may be considered as profit. In other branches the net income is as low as 6 to 9 marks ($1.42 to $2.14) per week. It must be remembered that these incomes are not the earnings of a single person, but represent the labor of entire families.

How inconceivably small the price paid for certain kinds of toys is can be seen in the case of pencil boxes of the cheapest quality, for which the maker gets from 48 to 58 cents per gross, or about 1⅓ cents a piece.

The daily meals of these people are reported by the commission to be confined largely to potatoes, linseed oil, bread, and coffee, and, at times, meat on Sundays.

With the price of wood rising, toy factories increasing in numbers in other parts of the country, and the price of toys falling, it seems that the people of the Erzgebirge must, in their increasing wretchedness, find some other means of sustenance. Exporters of toys who operate large factories in this neighborhood report good business and are of the opinion that the house industry of the Erzgebirge is doomed, and that the peasants will be forced to give up their independent production and enter factories.

J. F. MONAGHAN,
Consul.

CHEMNITZ, GERMANY, *August 5, 1903.*

MANUFACTURE OF PORCELAIN IN GERMANY.

The manufacture of porcelain has taken deep root in different parts of Germany. This is especially the case in the Kingdom of Saxony, wherein the cities of Meissen and Dresden produce porcelain that is exported to almost every country in the world. Porcelain industries on a smaller scale are also to be found in Chemnitz, Plauen, and Aue. The Waldenburg district in Silesia is also noted for its fine grade of porcelain. In Thuringia, Bavaria, as well as in some districts on the Saar and Rhine, porcelain is manufactured in considerable quantities.

One of the most noted porcelain factories in Germany is that which is operated by the Saxon Government at Meissen. It exports about $50,000 worth of porcelain goods to the United States every year. There are 700 workmen employed in the factory, and it is worthy of note that this number has remained about the same during the past one hundred and fifty years. Girls earn, when skillful, about 75 cents a day, and the skilled workmen who can model and paint earn $2.50 a day.

There is an industrial-art school in connection with the factory, where pupils and apprentices are taught drawing for two years. When this course is completed they pass on to the modeling and painting department for another two years. At the completion of the course the most skillful are sent to Dresden, Berlin, and other cities to study the fine arts. On their return to Meissen they are sure to find life employment, either in the porcelain factory of the Government or in some other factory of the city.

There are four primary industrial schools in Saxony, namely, in Chemnitz, Dresden, Meissen, and Zwickau. The number of pupils at present in all four schools is 241. These pupils are all apprentices, who are compelled to spend four years in learning their trade, and four months each year are spent in some one of these industrial schools.

According to Gothein's Deutsche Aussenhandel, in 1900 Germany exported 26,643 tons of white china ware and painted porcelain goods to foreign countries, valued at $9,900,800. The United States is far in advance of all other countries in buying china from Germany, importing 10,463 tons, or 20 per cent of the total exports. Great Britain holds second place, importing only 5,722 tons.

In 1900 Germany imported from France, Austria-Hungary, and Japan 766 tons of porcelain ware, valued at $309,400.

ERNEST L. HARRIS,
Commercial Agent.

EIBENSTOCK, GERMANY, *July 11, 1903.*

WINDOW-GLASS MANUFACTURE IN GERMANY.

The Chamber of Commerce at Saarbrücken has just published a report on the business done by the Verein Rheinischer Tafelglashütten (Union of Rheinisch Window-Glass Manufacturers) in 1902, some data of which will be interesting to our manufacturers of window glass, as it shows the present situation of the German market in this class of goods.

The production of the six factories which form the union amounted in 1900, 1901, and 1902 to 28,333,598, 27,189,702, and 26,488,026 square feet, respectively. Thus the production shows a steady decrease, and the decrease in the quantities sold is larger still. Of the total sales in 1902 only 1,262,696 square feet went abroad, against 4,448,528 square feet in 1901. During the latter part of 1902 the decreased demand was more pronounced and the prices, owing to a strong competition on the part of the Saxon, Bavarian, and Silesian works, had to be reduced from month to month. The result was that the inland prices which had already been reduced considerably in 1901 underwent in 1902 a further reduction of nearly 30 per cent. The export trade in 1902 yielded unsatisfactory results; there was a limited demand at prices which were barely sufficient to pay the costs of manufacture, which were kept up by the abnormally high prices of fuel.

The prospects for 1903 are by no means favorable; the demand during the first months remained very small, and as there is nothing in view which would justify the hope of an improvement in the near future, it is not unlikely that further reductions in the production will become necessary. Manufacturers are still in hopes that the reduction of freight rates to Switzerland and to Antwerp, which has been petitioned for during the last few years, may be finally granted. This would help them to compete on about even terms with the Belgian manufacturers of window glass.

OLIVER J. D. HUGHES,
COBURG, GERMANY, *August 8, 1903.* *Consul-General.*

BOHEMIAN LACE INDUSTRY.

The making of lace in Bohemia has increased to such an extent that it may now be considered one of the industries of the country. It is principally made by hand by the peasants during the winter time, when they have nothing else to do, in the neighborhood of Erzgebirge, Sumawa (Böhmerwald), Strazow, and Weissensulz, near

Bischofsteinitz and near Vamberk, and Kostelec (Orlici). As soon as the peasants can return to work in the fields this work stops, as they are paid but the trifling sum of 40 to 50 kreutzers (18 to 20 cents) per day for lace making, whereas they realize double this amount for work in the fields. This lace is cheap and very beautiful, and I am informed it is taking the place in the English market, whither most of it is exported, of the more expensive lace now in vogue there. Lace is also made by machinery at Barringen, Neudek, and Teplitz. The various kinds of this lace are known as Idrian Duchesse, Point a la Aiguille, Point de Venise, etc.

Believing there might be a demand for these goods in the United States, I have secured a large and valuable collection of samples of the different varieties, which, with prices attached, I forward to the Department.

The following is a full list of makers and manufacturers of this lace in Bohemia:

Krajkarska skola, N. J. P., Strazov.
Oldi Pelda, Vamberg.
Jindr. Fr. Melnicky, Vamberg.
Feig & Siebenauger, Görkau.
Bruder Kannenberger, Pleil.
Wilhelm Reinec, Weipert, Erzgebirge.
Julius Schmidt & Sohn, Weipert, Erzgebirge.
W. Schmidl & Söhne, Weipert, Erzgebirge.
Carl Günther, Gottesgab, Erzgebirge.
Eduard Schönfelder, Gottesgab, Erzgebirge.
Johann Wähner, Gottesgab, Erzgebirge.
Fuchs, Meindl & Horn, Graslitz, Erzgebirge.
Kurz & Zeidler, Graslitz, Erzgebirge.
Franz Stark, Graslitz, Erzgebirge.
Marie Vnize, Graslitz, Erzgebirge.
J. A. Baumann, Neudek, bei Carlsbad.
M. Faber & Co., Neudek, bei Carlsbad.
Anton Gottschald & Co., Neudek, bei Carlsbad.
Neudecker Maschinen Spitzenfabrik (Kamp & Co.), Neudek, bei Carlsbad.
Carl Pöhner, Neudek, bei Carlsbad.
J. I. Ulmann, Neudek, bei Carlsbad.
Purkert & Co. Barringer mech. Klöppel Spitzenfabrik, Barringen, bei Carlsbad.
Gebrüder Löw, Langgrün, bei Schlackenwert.
Deutsche Spitzenfabrik Aktiengesellschaft, Asch.
Josef Heinrich Bürger, Warnsdorf.
Ferdinand Wild, Wissensulz.
K. Starkenstein, Ronsperg.
Franz Eberhardt, Sonnenberg.
Sigmund Rindskopf, Teplitz.

ETHELBERT WATTS,
Consul.

PRAGUE, AUSTRIA, *July 22, 1903.*

LACE TRADE OF NOTTINGHAM.

Much complaint is heard, on the lace market, of the summer trade. Manufacturers say that the orders placed are not sufficient to keep their machines going steadily, and they are not disposed to make goods simply to increase possibly unsalable stocks. Many calls for new patterns are reported, but the willingness to speculate on novelties is not so pronounced. The exports to the United States have fallen off greatly since April, in comparison with the same period of 1902, though at the present moment there are signs of a revival.

As to different varieties of laces, valenciennes and torchons are doing well, and insertions and galloons sell steadily; cotton-embroidery trimmings are languid; cheap edgings and crochet laces are in average request; the silk branches are, as usual, seriously depressed and offer no encouragement to the production of novelties; caps, aprons, collars, ruffles, and streamers move in good quantities, but not sufficiently to keep all the workers busy; in lace curtains, the strong competition affects trade and is a matter of serious concern for the future, particularly in the direction of the United States, whither the exports of curtain machinery from this district are steadily increasing; mosquito netting and similar articles continue in good request; while in furniture laces the competition is so strong that orders are sometimes taken without profit in order to keep machines employed.

FRANK W. MAHIN,
Consul.

NOTTINGHAM, ENGLAND, *July 13, 1903.*

FRENCH AND BELGIAN AUTOMOBILE INDUSTRY.

French industrial papers are discussing the Belgian automobile trade as shown by recent statistics, and the Auto accords that little country the second place in that great new industry, which it says Belgium has wrested from Germany by a very close margin.

In making a comparison of Belgium's exports and imports during the years 1901 and 1902, the Auto says that in 1901 out of a total of 85 complete automobiles imported into Belgium 65 were from France; in 1902 out of a total of 125, 104 were French. The complete figures are as follows:

Automobiles imported into Belgium.

Country of origin.	1901.		1902.	
	Number.	Value.	Number.	Value.
Germany	6	$2,500	8	$5,120
England	2	1,200	3	2,650
Holland	1	400	8	4,450
France	65	71,400	104	78,500
Other countries	11	5,200	2	1,200
Total	85	80,700	125	91,920
Increase				11,220

Value of detached pieces imported.

Country of origin.	1901.	1902.
Germany	$11,000	$2,750
England	4,300	3,600
United States	2,550	100
France	54,700	83,950
Other countries	325	900
Total	72,875	91,300
Increase	....	18,425

Automobiles exported from Belgium.

Whither exported.	1901.		1902.	
	Number.	Value.	Number.	Value.
Germany	19	$12,070	30	$22,460
England	89	57,500	118	149,400
France	55	50,600	22	33,000
Italy	1	400	....	....
Holland	33	27,400	22	17,250
Other countries	19	23,500	14	20,000
Total	216	171,470	206	242,110
Increase	....	....	....	70,640

It will be seen from the above that England is Belgium's best foreign market for automobiles, just as she is for France.

BENJ. H. RIDGELY,
Consul.

NANTES, FRANCE, *August 6, 1903.*

FAILURE OF THE COCOON CROP OF PIEDMONT.

The Province of Piedmont in northwestern Italy is noted as the most productive cocoon section of the Kingdom. Last year my attention was attracted by the enormous quantities of cocoons that were brought to this market, the peasants, with their huge, overflowing baskets and sacks, occupying several squares of the magnificent Victor Emmanuel avenue. This year, to my surprise, the assemblage of peasants, their cocoon crops, and purchasing merchants present a sorry gathering.

I have visited the market several times, mingled with and conversed with producers and buyers, and learned these facts: Late frosts and prolonged cold weather kept the mulberry trees almost leafless, thus leaving the peasants without sufficient food for the growing worms. The mulberry leaves are the natural food of the silkworm, and the crop of foliage being so notably a failure at a critical time, other means to keep the worms alive had to be resorted to, but with disastrous results. The consequence is that the cocoon crop for the year is about 4,500,000 pounds, or one-third the amount of last year's crop. This is the estimate given me by several leading cocoon purchasers of Turin.

As is always the case, when an important article of consumption is scarce, the price goes up; hence the price of cocoons is about one-fourth more than it was at this time last year—two points of importance for Americans interested in the silk industry.

PIETRO CUNEO,
TURIN, ITALY, *July 10, 1903.* *Consul.*

SILK CULTURE IN MANCHURIA.

There is exported from this port and from the Yalu River and other ports in Manchuria considerable quantities of raw white, yellow, and wild silk and some silk cloth, pongees, and cocoons.

It is not possible to give even an approximate estimate of the amount, because that from all the ports excepting Niuchwang is carried by the native junks and through the native customs, of which we have no records. Exports, however, amount to millions of taels per annum. Large quantities of cocoons go to Chefoo and Shanghai and are there made into yarns and cloth. Some of these cocoons and skin silk are sent from Shanghai to France and are made into a special ribbon embroidery for the Chinese trade and returned to China.

The silk district extends from Kyao-chau on the coast over the mountains into the interior at the headwaters of the Yalu River.

The autumn cocoons are carefully kept by the natives over winter and the silkworm is hatched in April. These are taken into the hills where a scrubby white oak is grown and are put upon these trees to feed. About July another cocoon is formed and the worm from this finds an abundance of food in the full foliage. The last cocoons are therefore the most valuable. The process is much more crude than that used in the finer kinds of silk production, and the oak shrub does not produce as tender a food as the carefully trained and cultivated mulberry.

The oak is planted upon the hillsides and mountains, where the ground is too rough and steep and poor for food cultivation. At 3 years old the tree furnishes food for the worms.

The process of removing the silk from the cocoon, as well as that of making the cloth, is all by hand and the labor involved is enormous.

Kyao-chau is the center of the cloth-making district. I inclose samples* and present prices of Kyao-chau cloth.

Sample No. 1 is made from the raw silk, while the others have had the fiber dressed and softened by boiling before weaving.

HENRY B. MILLER,
Consul.

NIUCHWANG, CHINA, *June 22, 1903.*

COTTON CULTURE IN THE GERMAN COLONIES.

In order to meet the constantly growing demand for cotton in the German textile industries, the attempt has been made to grow cotton in the German African colonies, and according to the trials already made the success of this new undertaking seems almost assured. Cotton plantations have been established in Togo, Kamerun, German Southwest Africa, and German East Africa. A German syndicate also contemplates the culture of cotton in Asia Minor. In Togo the development of the cotton culture has been most successful, so much so that the second year's crop—that of 1902—was as large again as that of the first year, 50,000 pounds of cotton having been exported. The cost of producing 500 pounds of cotton, exclusive of business management and amortization, was 205.35 marks ($48.87), while the selling price realized was 343.50 marks ($78.75).

Great efforts are being made to further the cotton culture in the German colonies, and the most important cotton mills of Germany have, after thorough trial, declared Togo cotton to be of excellent quality, and are indorsing the efforts of the German colonial cotton growers, hoping thereby to become independent of American cotton, especially as Germany manufactures at present about $200,000,000 worth of cotton goods yearly, giving employment in its cotton industries of all kinds to over 1,000,000 workmen. It is claimed that America is unable to cover the world's demand for cotton, thereby causing cotton to become not a staple article of commerce, but one of speculation, and therefore greatly detrimental to the cotton-textile industry.

WALTER SCHUMANN,
Consul.

MAINZ, GERMANY, *July 20, 1903.*

***Samples are on file in the Bureau of Statistics, Department of Commerce and Labor, where parties interested may see them.**

ENCOURAGING COTTON PLANTING IN BRITISH WEST INDIES.

The cultivation of cotton is just now receiving considerable attention in Antigua. Montserrat has for a few years been raising a small quantity of high-grade cotton and is showing inclination to largely increase the acreage this year. The agricultural department of the West Indies and the Agricultural Society of Antigua have been making efforts to induce the planters of this island to put a part of their land in cotton. Several public meetings have been held, which I attended. The last meeting, at which the governor presided, was held on June 29. The Cotton Growers' Association of Manchester, England, has shipped, and they are on the way hither, a gin and press as a loan, free of charge, to the island. The Agricultural Society, with headquarters at Barbados, proposes to furnish another gin and an engine and to erect a building on land furnished by the government. In this "central factory," as it is called, they propose to receive all cotton and gin and bale it free of cost to the planter, excepting only the actual cost of labor, or they will remove the seed and bale the cotton for the seed, at the option of the planters. In addition to this the agents of the Royal Mail Steamship Company announce that they are instructed to receive all cotton raised in Antigua consigned to the Cotton Growers' Association at Manchester, England, and forward the same free of all charges for freight and handling. It is announced in the press that promises for the planting of about 400 acres to cotton this year were made at the recent meeting at Government House. Much of the seed is now in the ground and the balance will be planted during this month.

W. R. ESTES,
ANTIGUA, BRITISH WEST INDIES, *July 9, 1903.* *Consul.*

FRENCH COLONIAL COTTON PRODUCTION.

An association has recently been formed by a group of French merchants and spinners for the study and development of the culture of cotton in the French colonies, particularly in Africa. Reference is made in the prospectus to the efforts of the British Empire to encourage the growing of cotton in Egypt and India and to a German society for promoting the cultivation of cotton in Togoland and other German colonies.

Southern Algeria is considered by a writer in the Dépêche Coloniale as deserving the attention of the French Colonial Cotton Growing Association. The oases created by the public works department of Tunis in southern Algeria by means of artesian wells have proved extremely fertile, and with palms and other trees to shelter the cotton from the winds would well serve the purpose of the association. In support of his suggestion, the writer quotes from a report made to the Tunisian department of agriculture to the effect that samples of cotton had been collected at El Oudiane, El Hamma, and Nefta, and that the better grades grown at Gabès had been valued by Havre brokers at $193 per metric ton for Peruvian ordinary to irregular. The cost of transport per metric ton is estimated at $19.30 from Tozeur to Gofza by cart, $6.18 from Gafza to Sfax by rail, and $4.83 from the latter port to Marseilles.

OLIVER J. D. HUGHES,
COBURG, GERMANY, *July 14, 1903.* *Consul-General.*

JUTE CROP OF INDIA FOR 1903.

As about 60 per cent of the jute manufactures and nearly 15 per cent of the raw jute exported from India go to the United States, the following statistics, compiled from the "First forecast of the jute crop in Bengal, where most of the jute is raised for the season 1903," by the officiating director of the department of land records and agriculture, Bengal, are submitted. Returns have been received from 26 districts in Bengal, the area under jute in the remaining 21 districts being insignificant. About two-thirds of the crop is grown in eastern Bengal, while one-third comes from the northern districts. The present forecast contains figures for the area sown and the probable outturn of the crop, as estimated up to the middle of June.

The weekly weather and crop reports from the important jute-growing districts show marked deficiency of rain in April and to some extent in May.

The collectors report deficiency of rain at the time of sowing from all the jute-growing districts except Murshidabad and Balasore, where areas under jute are comparatively unimportant.

Not less than 2,300,000 acres may be taken as the normal area under jute and 7,500,000 bales as the normal outturn.

The reports last year show that 2,200,000 acres were sown and the figures of exports and consumption show the crop to have been not less than 5,800,000 bales.

The present season collectors report the area under jute as 2,019,000 acres. It is undoubtedly the fact that a smaller area has been sown this year than last, owing to the want of rain at the time of sowing; but, having regard to the marked tendency to underestimate, it is safe to assume that the area under jute this year is not less than 2,100,000 acres. Notwithstanding the smaller area, the estimate for outturn given by district officers are, on the whole, more favorable than last year.

As the area sown this year is less than 10 per cent below the normal crop, it is believed the outturn will be 5,400,000 bales.

R. F. PATTERSON,
CALCUTTA, INDIA, *July 2, 1903.* *Consul-General.*

CANADIAN BOUNTIES.

IRON AND STEEL BOUNTIES.

The policy of the Canadian Government in regard to the iron and steel duties was promulgated on July 7, 1903. Wire rods, which are not now made in Canada and are on the free list, will, when manufactured here, earn a bounty of $6 a ton on condition that they are sold to the steel-wire makers to undergo further finishing processes. The idea of this is to secure the establishment of a new industry in Canada. A bounty of $3 per ton will also be paid on large-sized steel plates and on structual iron when produced in Canada. At present these plates are not made here, and they enter at the low duty of 10 per cent, while structural iron is subject to a duty of 35 per cent. The reduction of the sliding scale of iron and steel bounties is postponed for one year.

In 1897 the Government granted the following bounties per ton:

On steel ingots	$3
On puddled iron bars	3
On the proportion of pig iron produced from Canadian ores	3
On the proportion of pig iron produced from foreign ore	2

In 1899, however, it was enacted that these bounties should be paid yearly in the following proportions and cease in 1907:

	Per cent.
1902-3	90
1903-4	75
1904-5	55
1905-6	35
1906-7	20

The effect of the suspension is that 90 per cent of the duties will be paid in 1903-4, as well as during the fiscal year which has just closed, and thereafter in the following proportions:

	Per cent.
1904-5	75
1905-6	55
1906-7	35

The announcement that the Government would grant a bounty of three-eighths of 1 cent per pound was made by Mr. Fielding in his budget speech. The resolutions are as follows:

The governor in council may authorize payment of the following bounties on the undermentioned articles manufactured in Canada from steel produced in Canada, from ingredients of which not less than 50 per cent of the weight thereof consists of pig iron made in Canada, viz:

On rolled, round wire rods, not over three-eighths of an inch in diameter, when sold to wire manufacturers for use in making wire in their own factories in Canada, a bounty of $6 per ton; on rolled angles, tees, channels, beams, joists, girders, or bridge building or structural rolled sections, and on other rolled shapes not round, oval, square, or flat, weighing not less than 35 pounds per lineal yard, and also on flat eye-bar blanks, when sold for consumption in Canada, a bounty of $3 per ton.

On rolled plates not less than 30 inches in width and not less than one-fourth of an inch in thickness, when sold for consumption in Canada for manufacturing purposes for which such plates are usually required, and not to include plates to be sheared into plates of less width, a bounty of $3 per ton.

The governor in council may make regulations to carry out the intentions of the foregoing section.

That chapter 8 of the statutes of 1899 be so amended as to provide that the bounties on steel and iron authorized by chapter 6 of the statutes of 1897 shall be continued until June 30, 1907, and that the rates of such bounties shall be as follows:

From July 1, 1903, to June 30, 1904, both inclusive, the bounties shall be 90 per cent of the amount fixed by the said chapter 6 of the statutes of 1897.

From July 1, 1904, to June 30, 1905, both inclusive, the bounties shall be 75 per cent of the amount fixed by the said chapter.

From July 1, 1905, to June 30, 1906, both inclusive, the bounties shall be 55 per cent of the amount fixed by the said chapter.

From July 1, 1906, to June 30, 1907, both inclusive, the bounties shall be 35 per cent of the amount fixed by the said chapter.

The Government has decided not to treat the Newfoundland ore as a domestic ore in regard to the duties payable, although the Dominion Iron and Steel Company made an application to that effect.

BINDER-TWINE BOUNTY.

Under date of February 26, 1903,* I reported that representatives of the eleven binder-twine and cordage factories in Canada had waited upon the ministers of customs and finance and asked for the imposition of a duty on binder twine, the reason assigned for this action being that the American manufacturers were able to obtain their manila fiber three-eighths of 1 cent per pound less than their Canadian competitors; consequently the former were able to undersell the latter in the Canadian market. As a result of this representation, the Dominion Government has come to the relief of the binder-twine industry in the following resolution passed last week:

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* Published in ADVANCE SHEETS No. 1591 (March 11, 1903).

> The governor in council may authorize the payment of a bounty to any corporation, firm, or person manufacturing binder twine in Canada, such bounty to be equal to the amount paid as export duty in the Philippine Islands on manila fiber produced in such islands and used in the manufacture of binder twine in Canada. Such bounty shall only be payable in respect of binder twine manufactured on or after September 1, 1902: *Provided, however*, That the bounty shall not exceed three-eighths of 1 cent per pound on the manila fiber so used in the manufacture of binder twine. The governor in council may make regulations to carry out the intention of this act.

During the year 1902 Canada imported binder twine to the value of $1,750,859, and of this the United States supplied $1,683,772.

E. N. GUNSAULUS,
TORONTO, CANADA, *July 22, 1903.* *Consul.*

CANADIAN CUSTOMS AMENDMENT ACT.

The new Canadian customs amendment act reconstitutes the board of customs, which formerly consisted of the commissioner of customs, Dominion appraisers, and assistant Dominion appraisers—about 15 members in all. As these officials are located at different points in Canada, a full meeting of the board could rarely be held, and it was even difficult at times to secure a quorum. A quorum has now been reduced to three ministers. The principal advantage of this is that it will enable the board, when occasion arises, to act promptly in deciding the rating of any article or other difficulty. This will be a great convenience to importers.

Another concession to importers is that invoices may be accepted in the currency in which goods are actually purchased, instead of, as formerly, in the currency of the country from which goods were exported. Advantage also lies in the enlargement of the time in which refund claims may be made. Formerly, if there was an error in invoice or shortage in goods, or if goods were damaged in transit, no refund claims could be entertained unless notice were given by the importer to the collector within ten days from date of entry or landing of goods. This period has been extended to fourteen days. A new clause provides that if goods are injured or destroyed, in whole or in part, by fire or other casualty, after entering a customs port and while in the custody of the officer of customs, the duties on the goods destroyed will be refunded. Formerly no refund of duty was allowed under such circumstances.

An important change is made affecting transportation companies. Up to the present time railway, express, and steamship companies have had to pay the charge for attendance of customs officers outside of official hours, and this charge has amounted annually in the whole of Canada to nearly $80,000. The expense of this service will hereafter be borne by the department of customs, an appropriation for that purpose having been voted by Parliament. The companies must, however, pay for the attendance of officers on Sunday.

The Government has power under the new act to reduce the duty on any articles, whether natural products or products of manufactures, used as material in Canadian manufactures. Heretofore the governor in council had power to abolish but not to reduce duties.

FELIX S. S. JOHNSON,
STANBRIDGE, CANADA, *July 24, 1903.* *Commercial Agent.*

NEW COLOMBIAN TARIFF.

The following memorandum is submitted to make clearer the conditions under which importers and exporters are, and have been, laboring as a result of this new tariff, taken in conjunction with the present monetary system of Colombia.

Looking at the figures of the new tariff and comparing them with the tariff figures of 1897, 1898, and 1893—up to March 1, when the new tariff took effect—we find a tenfold increase (more or less) in all the fifteen classes into which imports are divided in the Colombian customs except in Nos. 8, 9, and 10 (rough cotton goods, etc., principally), wherein the increase is a little higher. Making a gold comparison of the duties just established this year and those in force before the war (from January 18, 1898) an all-around increase has taken place, which rises in proportion as exchange lowers.

The new tariff caused a panic among importing merchants, and in some cases large orders for goods transmitted by them were countermanded by cable. The duties on what may be termed the necessaries on which the poorer people have entirely to depend for their clothing—*i. e.*, cotton shirtings, crude stuff, etc.—are subjected to the highest tax. The prices which merchants are forced to demand for these articles are almost prohibitive, as the following liquidation will show (Colombian currency):

Description.	Former duty.	Present duty.
Cotton goods:		
Per kilogram (2.2 pounds)	$2.25	$27.00
Per bale (65 kilograms, or 143 pounds)	146.25	1,755.00

This shows a twelvefold increase in duties. In an order for 100 bales a duty of $175,500 has to be paid, whereas previous to March 1 the duty on the same order was $14,625; thus the importing merchant has to meet a difference of $160,875. As matters stand, the fluctuating exchange makes little difference to the importing merchant. Take the case of these 100 bales of cotton goods. These, by the time he receives them in Bogotá, will cost him, including customs duties, river and mule freight, and sundry expenses, over $250,000 Colombian currency.

When exchange lowers, he is not able to lower his prices in proportion, as he has to continue to meet this large outlay in paper money. If exchange rises, he has to raise prices in order to enable him to buy drafts to pay for the goods.

I deem this condition of affairs particularly important from the fact that in its present state the new tariff probably affects American interests more than any other from the character of our products—*i. e.*, plain, heavy goods, crude stuffs, gray drilling, etc.; for while the price of labor in the United States is comparatively high, on the other hand it is admitted by all foreigners here that this class of American textiles is so good for the price that no other country can compete with them. As they put it, "America beats the world in these goods." As a result the shipments have been heavy, and the result of the increased tariff evident.

A great sentiment having developed throughout the country for putting this tariff on a gold basis, and the rumor that it will be presented to the present Congress under the heading "free stipulation," has led me to submit this memorandum.

ALBAN G. SNYDER,
Consul-General.

BOGOTÁ, COLOMBIA, *June 30, 1903.*

INSECURITY OF THE HARBOR OF VALPARAISO.

The statistics on shipping in the harbor of Valparaiso for the past year note the arrival of 8,000 vessels of all classes and the departure of practically the same number, with a tonnage, both incoming and outgoing, of something like 12,000,000 tons.

Notwithstanding the great shipping interests represented by these figures and the further fact that Valparaiso is the chief commercial port of Chile—the second city in size in the Republic, with a population of 150,000 inhabitants—the harbor, or rather the bay upon which the city is built, is one of the most insecure on the west coast of South America. There is absolutely no protection to ships and shipping interests against the strong winds and severe storms that prevail during the months of June, July, and August of each year. There is no breakwater in the Bay of Valparaiso, which fronts to the north, the direction from which the severe storms and heavy seas come during the winter months. As a result, great damage is done to vessels in port and to cargoes along the water front by the storms called "northers." Not infrequently ships and many lives are lost. The insecurity of the harbor is such that most of the steamships put to sea upon the approach of a norther in order to avoid possible disaster. Sailing vessels, of which there are always a large number in port, are unable to quit the harbor in time of storms; consequently, many are damaged or are driven ashore and destroyed.

A disastrous storm visited this port Monday, June 2, destroying a fine passenger steamer, the *Arequepa*, of 3,000 tons register, of the Pacific Steam Navigation Company, with about one hundred persons on board, including passengers and crew. Of this number only about twenty were saved.

During the same storm two sailing vessels were driven onto the "malecon" and destroyed. They were the British bark *Foyledale* and the Chilian bark *Chivilingo.* The wife and daughter of the captain of the *Foyledale* were lost. The German ship *Persimmon* was also driven from her moorings and drifted into one of the floating docks in the harbor, causing considerable damage.

The mole along the water front was almost entirely destroyed, and a great deal of valuable cargo awaiting transfer from the shore to ships in the bay was destroyed. In addition to the disasters and damages above enumerated, there was also great damage to small craft in the bay.

Statistics show that every season heavy damages are sustained in the Bay of Valparaiso from the storms that prevail in this latitude during the winter months, and that on an average of once in seven years some terrible disaster, like that of June 2, occurs, resulting in the destruction of vessels and great loss of life.

The natural conditions of the Bay of Valparaiso make the building of breakwaters impractical because of the deep water at the mouth of the harbor and the heavy seas that are driven in by the north winds. These conditions and the damages resulting therefrom annually have a tendency to divert from this port much of the shipping trade that formerly came to Valparaiso.

R. E. MANSFIELD,
Consul.

VALPARAISO, CHILE, *June 8, 1903.*

PROPOSED CUSTOM-HOUSE AT DALNY.

I have just received a clipping from the CONSULAR REPORTS for May, 1903, which states that under the date of February 15, 1903, Commercial Agent R. T. Greener reported from Vladivostock that the Russian newspaper Novy Kry, of Port Arthur, announced that on January 1 / 14, 1903, the custom-house at Dalny was opened for levying duty on merchandise carried by the Chinese Eastern Railroad into and from Manchuria. This newspaper announcement conveys a wrong impression; there are at present no customs duties collected at Dalny.

I am told by a Russian customs officer here that the custom-house at Dalny was opened on the 1st of January, 1903, but closed on the same day. I have been informed by reliable persons that in order to promote the commercial interests of Dalny, it was decided that duty should be collected on goods passing to and from Manchuria by the Chinese Eastern Railway beyond the station of Wa Fung Tien, and that this duty should be payable at Dalny, thus forcing the Port Arthur merchants to send their goods to Dalny to be examined and passed. The inference was that to save time and expense these merchants would be induced to establish themselves at Dalny. This measure caused great alarm in business circles in Port Arthur and protests were made to Admiral Alexeef, the commander in chief of the military and naval forces of the Quangtung district. The admiral, wishing to see Port Arthur develop, made strong representations to St. Petersburg, asking that if duties are to be collected a custom-house be established at Port Arthur also, or at Wa Fung Tien. The Minister of Finance is said to have given in at the time.

I hear that negotiations are being carried on at Peking for the establishment of a custom-house at Dalny (with a branch at Wa Fung Tien) on the same lines as the one at Tsin Tao, in the Shantung district. Russian customs officials are now in Dalny to make the necessary arrangements, and it is believed that the custom-house will be a reality within the next month or two.

M. M. LANGHORNE,
Commercial Agent.

DALNY, MANCHURIA, *June 17, 1903.*

EXPORT TAX ON TIN IN THE MALAY STATES.

Consul-General O. F. Williams writes from Singapore, June 19, 1903, that the Government has imposed an additional export tax on tin ore of $30 Mexican ($11.50) per picul of 133⅓ pounds, except when it is to be smelted in the colony. The export tax was formerly $13.63 Mexican ($5.22) per picul, all the ore being smelted within colonial limits. It is thought that the new export tax will discriminate not only against foreign countries, but also against British colonies, such as Hongkong, Australia, and Ceylon; it will also act against the smelting in England or Wales of any tin ore from the oriental supply stations. Local smelters will now have an absolute monopoly of tin smelting. The increase of the tax, Mr. Williams notes, practically multiplies it by three, so that local tin smelters obtain tin ore with $13.63 Mexican ($5.22) export tax, while all outsiders must pay $43.63 Mexican ($16.71) per picul. Allowing 40 per cent dross in smelting, this export tax alone amounts to about $333 gold per ton of smelted or pig tin.

The American Asiatic, published in San Francisco, Cal., states in its issue of July 18 that the duty of $30 per picul (133⅓ pounds) on tin ore exported from the Malay States is "a protective act against the International Tin Company, which had begun to deal in ore direct for smelting in the United States," and adds that that company is now considering putting up smelters in the colony.

The duty of $30 per picul (133⅓ pounds), it says, is in addition to the duty on tin ore formerly existing.

In connection with the foregoing, the following table, prepared in the Bureau of Statistics, Department of Commerce and Labor, will be of interest:

Imports of tin, in bars, blocks, pigs, or grain or granulated (free), into the United States.

Imported from—	1901.		1902.		1903.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Pounds.		*Pounds.*		*Pounds.*	
United Kingdom	30,779,092	$8,652,634	30,939,417	$7,912,575	35,108,654	$9,355,961
Netherlands	2,999,163	844,492	3,448,996	871,931	3,451,184	944,304
East Indies	38,440,746	10,084,388	43,723,788	10,377,088	47,157,011	12,709,211
Other Asia and Oceania	621,281	157,872	548,688	135,123	476,195	126,515
Other countries	251,608	66,165	691,467	165,133	1,824,992	482,811
Total	73,091,890	19,805,551	79,352,356	19,461,850	88,018,036	23,618,802

Under date of July 10, 1903, Consul Marshal Halstead, of Birmingham, transmits the following statistics from the London Times of July 9:

TIN PRODUCTION OF THE WORLD.

In 1875 the world's output of tin amounted in round figures to some 40,000 tons, of which 10,000 tons came from the Straits Settlements, 10,000 tons from Cornwall, 8,000 tons from Dutch East Indies, 11,000 tons from Australia, and the insignificant residue from South America and elsewhere. To-day the annual output exceeds 75,000 tons, and of this more than 46,000 tons—over 61 per cent of the whole—come from the Straits Settlements, while Cornwall produces now only 5,000 tons and the Australian output has similarly declined. On the other hand, the Dutch East Indies export some 14,000 tons and Bolivia has an output of 5,000 tons. There are a few other places whence tin is shipped to the world's markets, but the amount of their production is comparatively insignificant. The fact which is of importance is that the tin produced by the Malay States under British protection exceeds the total output of the world in 1875 by more than 6,000 tons and represents to-day considerably more than half of the supply of the metal now annually available.

PROGRESS OF COMMERCIAL EDUCATION IN SAXONY.

In ADVANCE SHEETS No. 915 I described the state of commercial education in Saxony as it was in 1900. Since that time seven new commercial schools have been added to the list, making in all a total of 58 up to date.

The commercial school in Eibenstock has made good progress. In August, 1900, the Saxon government issued a decree which provided a better supervision of the commercial schools on the part of the chambers of commerce, and, what is of much greater importance, it provided that every merchant or manufacturer must pay $1 for every $1,000 of his income into the treasury of the commercial school located in his city. This system has placed every commercial school in Saxony on a solid financial basis.

In Eibenstock the board of directors has provided a small fund to be spent annually in purchasing new books for the students library, which already consists of 100 well-selected volumes. The director has received permission to retain after school hours all tardy and disobedient apprentices. The teacher receives extra compensation for the time thus spent, and the plan, on the whole, has been found to work exceedingly well.

In 1902, during a six weeks' vacation of the director of the Eibenstock commercial school, I was asked to give instruction in a number of classes. I consented to do so, and the director and school board expressed their thanks in the school catalogue for 1903, recently published.

ERNEST L. HARRIS,
Commercial Agent.

EIBENSTOCK, GERMANY, *July 14, 1903.*

GERMAN EXPERTS TO STUDY FOREIGN LABOR CONDITIONS.

The Prussian Minister of Commerce, Herr Moeller, a few days ago addressed the Board of Trade at Osnabrück on the betterment of the handicraft and labor interests in Germany. Incidentally the minister stated that the Government would send commissions of experts to Austria, England, Switzerland, and the United States for the purpose of studying the institutions and methods existing therein for the benefit of labor and trades. On the same occasion Herr Moeller advocated a governmental organization of chambers for trades and labor and urged the establishment of trade schools where craftsmen may be enabled to obtain a semimercantile education, so as to acquire the skill of making correct estimates, economic calculations, etc.

SIMON W. HANAUER,
Deputy Consul-General.

FRANKFORT, GERMANY, *July 23, 1903.*

TRAINING ENGINEERS.

The question of the best way to train engineers being regarded as of considerable importance in England at the present time, Principal Laurie, of Heriot Watt College, Edinburgh, writes to the London Times announcing an arrangement his institution has made with some of the leading firms in Edinburgh which will enable parents to give their sons a complete training as engineers without having to send them first to a technical college and then search for a suitable firm in which to apprentice them. Mr. Laurie's scheme is in the combination, in the course of instruction, of the technical colleges with that of the actual workshop, the agreement with engineering firms being that students shall begin their apprenticeship before they have finished their college course, the apprenticeship to be shortened for the students who obtain the technical college's diplomas. So favorably was the plan received by several engineering firms in Edinburgh that they have agreed to take a number of college students into their works at reduced premiums and to shorten by one year the term of apprenticeship, which is to begin at the end of the student's second college session, the complete course of training at the college for electrical and mechanical engineers and in the actual workshop taking from five to six years.

MARSHAL HALSTEAD,
Consul.

BIRMINGHAM, ENGLAND, *July 23, 1903..*

MEAT-INSPECTION LAW OF PRUSSIA.

In order to do away with difficulties and misunderstandings which became apparent when the law for the import and inspection of foreign meat began to take effect, the Prussian Ministers for Agriculture, Finances, and Trade and Industry, with the sanction of the Chancellor, have issued the following instructions:

1. Fresh animal blood must be counted as meat, and can therefore be imported only in "whole bodies of animals." Salted blood is excluded because the necessary certainty of harmlessness to human health can not be arrived at in blood which is not contained in bulk. Heavy salting of blood of sick animals gives no guaranty against danger to human health. Also all other parts of warm-blooded animals, as long as they are intended for food for human beings, are allowed to be imported in fresh condition only when these parts are in natural coherence to the whole animal body or its halves. This includes particularly such inner organs the importation of which does not naturally follow the import of other parts; for instance, fresh lard or fresh intestines which are not contained in the animal body are forbidden to be imported, even if they reach the place of inspection together with the bodies of which they were presumed to have been a part.

2. The admission of well-boiled liver, which up to date was permitted to enter, is declared to be contrary to the law of inspection of meats. Prepared meat is admissible only if in its origin and preparation there is, according to experience, no danger to human health, or if its harmlessness to health can be proved positively at its importation. Neither the one nor the other of these conditions exist with cooked livers, for if the cooking of livers is not sufficient to kill all animal or botanical germs, unsound adhesions to the liver can not be removed at all by cooking; therefore, unsound livers, even after the most thorough cooking, still retain the condition of rotten and disgusting nutriments. Besides all this, the cooking of the liver, more than any other system of preparing the same, is calculated to cover up the unhealthy condition of this organ; fresh tuberculous formation, young cysts, etc., are liable to be so changed by the process of cooking that they are not very easily detected on examination.

3. Since the inner organs of animals, particularly of pigs, singly, seldom reach the weight of 4 kilograms (8.8 pounds), there has been developed in several places of inspection the import of such organs adhering to different parts of the animal body in a pickled condition. As long as these coherent parts really weigh at least 4 kilograms, and as long as it can be proved that a rigid examination shows that these inner parts have absolutely lost the condition of fresh meat, there is no objection to the importation of such parts, provided that the final inspection permits a favorable report.

4. The ordering of lard prepared in foreign countries very often is done after the receipt of samples; therefore it happens often that samples of this lard are imported in small lots and of unimportant weights. It is ordered that the chemical inspection of parcels up to 1 kilogram (2.2 pounds) can ordinarily be dispensed with, and it is considered necessary only when on first examination the condition of the sample causes suspicion.

5. Meat peptones as such are allowed to be imported, but since meat powder and meat flour are named among such products of meats as sausages, etc., which, on account of consisting of hashed meat, are excluded from import, there exist

doubts as to meat peptones having the privilege of being imported. Until further orders, peptones necessary for medical purposes, even if they quite resemble meat powder, are not to be considered as meat in the sense of the law for inspection of meats and can be imported without examination.

6. It has been found that some imported meats contain borax, of which, according to appearances, it would seem no use has been made with the intention of preserving the meat. For instance, the meat could have become affected by the borax contained in packing material which had been used previously to carry goods containing boral; but since the importation of all meat containing borax is strictly forbidden, meat thus affected must be excluded.

W. BARDEL,
Consul.

BAMBERG, GERMANY, *July 17, 1903.*

GERMAN MEAT INSPECTION.

The results of the German meat-inspection law which went into effect on April 1 of this year are already quite noticeable in the figures of German meat imports.

In the two months of April and May, 1903, only 2,138 tons of fresh meat were imported into Germany, against 4,160 tons during the same period of 1902, and only 1,800 tons of simply prepared meat, against 4,852 tons in April and May, 1902. Sausages and canned meat are not included, as such imports of "prepared meats" have been prohibited since October, 1900.

As the new law applies to fatty substances for food purposes, imports of lard and artificial lard have also decreased from 17,141 tons in April and May, 1902, to 10,109 tons for the same months in 1903.

The fresh-beef imports decreased from 2,150 tons to 1,192 tons; fresh pork, from 1,988 tons to 936 tons; pickled pork, etc., from 1,365 tons to 474 tons; hams and bacon, from 2,875 tons to 853 tons.

From the United States only 7.4 tons of ham were imported in April and May of this year, against 262 tons in the same period of 1902; of bacon, 507 tons against 1,749 tons.

RICHARD GUENTHER,
Consul-General.

FRANKFORT, GERMANY, *July 7, 1903.*

Statistics just issued concerning the importation of meat give the following facts:

The importation of prepared beef from the United States for the month of May, 1902, amounted to 466,600 pounds and for the month of May, 1903, to 99,600 pounds, a decrease of 367,000 pounds; as to prepared pork, the figures for May, 1902, show an importation of 800,400 pounds and for the same period of 1903 only 29,200 pounds, a decrease of 771,200 pounds. The importation of American hams has practically ceased; during May, 1902, 202,600 pounds were imported, while the statistics for May, 1903, show only 200 pounds.

Upon inquiry, I am informed that since this law went into effect (April to July 1) 768 pieces of bacon, sides, and hams were inspected here at Stettin and that not a single piece was rejected. The local market has shown but slight advance in the price of meats; but just as soon as the immense supplies that were "laid in" before this law went into effect are consumed and the drain on the home market commences, there will be a sharp advance.

It is believed that this act will undergo a modification in the near future.

JOHN E. KEHL,
Consul.

STETTIN, GERMANY, *July 7, 1903.*

EXPORTS OF AMERICAN MEATS TO GERMANY.

Quantities and values of American meats and meat products exported to Germany during the fiscal years 1893, 1896, and 1899–1902, compiled from the annual volume of the Bureau of Statistics showing the exports of domestic merchandise by articles and countries.

QUANTITIES.

Article.	1893.	1896.	1899.	1900.	1901.	1902.
Beef:	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Canned	10,017,142	7,539,806	3,334,880	3,876,806	2,559,754	353,414
Salted and other cured	6,226,871	6,579,728	5,911,654	6,041,811	6,966,853	8,730,223
Tallow	6,034,293	6,983,531	16,895,589	10,802,572	10,321,084	5,358,659
Bacon	8,106,499	9,086,825	36,014,178	26,027,162	18,394,390	20,009,656
Hams	898,804	1,855,798	9,813,118	3,615,843	2,156,646	2,128,576
Pork, salted or pickled	709,900	1,261,000	15,515,225	11,062,825	9,830,425	8,671,775
Lard	70,170,320	121,893,903	229,230,175	195,595,578	182,389,879	173,517,891
Oleo, the oil, and oleomargarine	23,576,742	25,403,079	30,612,969	27,229,755	34,717,310	28,321,585
Total	125,740,571	180,603,670	347,347,788	284,252,352	267,336,341	247,091,779

VALUES.

Article.	1893.	1896.	1899.	1900.	1901.	1902.
Beef:						
Canned	$829,652	$616,540	$294,123	$361,319	$247,804	$35,318
Salted and other cured	334,983	376,158	319,506	344,846	397,395	570,922
Tallow	298,315	297,873	677,487	524,686	516,498	300,570
Bacon	678,237	603,022	2,520,225	1,887,810	1,386,055	1,675,155
Hams	91,805	176,443	903,010	345,540	218,758	219,826
Pork, salted or pickled	55,514	74,992	824,018	665,076	655,697	719,438
Lard	6,429,211	7,788,975	13,600,767	12,269,958	13,700,875	16,252,251
Oleo, the oil, and oleomargarine	2,371,399	1,773,454	2,080,029	2,141,867	2,647,375	2,597,581
Sausage casings	537,526	739,075	710,307	931,462	1,143,279	599,820
Total	11,626,542	12,446,532	21,929,472	19,472,564	20,913,736	22,970,881

DECLINING MEAT IMPORTS IN GERMANY.

As was generally expected, there comes from the daily press throughout Germany complaints about the reduced supply of meat caused by the somewhat drastic meat-inspection law, the last remaining clauses of which went into force on the 1st of April, 1903. The general effect of the new regulations will be inferred from the fact that during the three months from April 1 to June 30, 1903, only 3,250 tons of fresh meats were imported into Germany, against 4,715 tons during the same period in 1901 and 5,776 tons in 1902. The import of smoked and other simply prepared meats dropped from 6,561 tons to 2,240 and bacon from 3,073 tons to 771 during the April-June quarter, as compared with the imports for the same period of the preceding year. Hams declined likewise from 810 tons to 256 and other forms of pork meats from 1,825 tons to 574. Add to this the fact that by another clause of the same law, which has been in force since October, 1900, the importation of sausages and canned meats—of which 8,842 tons, valued at $2,046,800, were imported in 1899—has been prohibited, and it will be apparent that the German meat import has been reduced to about one-third of its former proportions. This in a nation of such liberal and constant meat eaters as the Germans is an economic fact of serious and far-reaching importance.

The deficit in imported meats has, however, been counterbalanced to some degree by an increase in the receipts of foreign cattle, of which there were imported during the first six months of 1903 174,000 head, valued at 54,000,000 marks ($12,852,000), as against 148,394 head, valued at 44,000,000 marks ($10,472,000), during the same period in 1902. This increased import of live cattle, however, is stimulated by another fact, viz, the new tariff law, which will probably go into effect some time next year. It raises the duty on imported cattle to $4.28 per 100 kilograms (220.4 pounds), live weight, which will all but prohibit importations under ordinary conditions of the market. Naturally such a change in duties has stimulated heavy importations during the last months before the new schedule is to go into effect.

FRANK H. MASON,
Consul-General.

BERLIN, GERMANY, *August 8, 1903.*

In connection with the foregoing report from Consul-General Mason, the following figures showing the exports of meats from the United States during the fiscal years 1901, 1902, and 1903, prepared in the Bureau of Statistics, Department of Commerce and Labor, will be of general interest:

Exports of meats from the United States.

Whither exported.	1901.		1902.		1903.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Beef, canned:	*Pounds.*		*Pounds.*		*Pounds.*	
United Kingdom	40,203,687	$3,912,646	51,282,929	$5,081,762	47,253,444	$4,857,124
Belgium	....	....	329,787	32,201	518,832	52,610
France	678,504	68,089	823,776	82,807	400,374	40,164
Germany	2,559,754	247,804	353,414	35,318	985,433	98,702
Total*	53,445,521	5,307,501	66,645,838	6,646,130	76,307,114	7,916,928
Beef:						
Salted or pickled	55,312,632	3,145,219	48,632,727	3,031,027	52,801,220	3,814,671
Other cured	789,285	72,677	818,382	72,836	1,126,032	102,184
Total	56,101,917	3,217,896	49,451,109	3,103,863	53,927,252	3,916,855
Exported to—						
United Kingdom	20,019,678	1,206,242	16,534,266	1,096,138	19,696,417	1,526,933
Belgium	....	....	1,496,008	92,324	1,607,900	110,440
France	136,290	6,887	123,000	7,505	187,400	11,944
Germany	6,931,353	395,402	8,730,223	570,922	9,749,423	707,037
Bacon:						
United Kingdom	369,082,490	30,884,512	310,380,793	28,927,610	162,549,709	17,572,088
Belgium	....	....	21,361,704	1,941,997	11,349,214	1,131,406
France	2,755,224	196,782	845,484	75,048	447,546	44,796
Germany	18,394,390	1,386,055	20,009,656	1,675,155	13,705,305	1,339,119
Netherlands	....	....	5,736,628	499,230	3,764,141	385,211
Total*	456,122,741	37,499,026	383,150,624	35,449,797	207,336,000	22,178,525
Hams:						
United Kingdom	191,127,894	26,269,042	202,390,263	22,569,633	189,026,769	22,797,301
Belgium	....	....	6,648,096	674,814	3,814,913	411,308
France	667,119	65,310	180,041	18,572	135,740	14,843
Germany	2,156,646	218,758	2,128,576	219,826	1,143,210	116,658
Total*	216,571,803	22,842,778	227,653,232	25,222,744	214,183,365	25,712,633
Pork:						
United Kingdom	88,731,438	6,830,647	98,504,537	8,641,863	71,497,640	7,592,301
Belgium	....	....	6,047,148	520,219	3,915,839	402,417
France	111,925	7,196	78,000	6,750	89,300	8,851
Germany	9,830,423	655,697	8,671,775	719,438	2,896,130	270,437
Total*	169,372,197	12,351,170	160,067,949	13,770,026	116,253,487	11,995,253
Lard:						
United Kingdom	211,264,628	16,377,255	199,442,907	19,019,841	196,458,773	20,747,232
Belgium	....	....	30,404,880	2,874,757	23,702,251	2,413,561
France	15,471,922	1,148,518	7,552,774	667,164	4,346,321	427,708
Germany	182,389,879	13,700,875	173,517,891	16,262,251	148,962,391	15,448,598
Total*	611,357,514	46,560,148	556,840,222	52,375,864	490,755,821	50,854,504

* Including countries not named.

GERMAN DEMAND FOR MODIFICATION OF MEAT INSPECTION.

The society for protecting the general interests of German commerce and industry have petitioned the "Bundesrath" to modify the laws of June 3, 1900, and July 12, 1902, regarding the prohibition of importing canned meats or sausages, the inspection and examination of cured meats and lard, and the excessive fees collected for such services. In joining this movement the Stettin Chamber of Commerce has the following to say:

> With right does the society claim that through these regulations the trade is burdened considerably more than what is necessary for veterinary and sanitary purposes. With right do they claim that the prescribed fees do not bear a comparison with the services rendered, and that a necessary food is unnecessarily increased in price, and in some cases the importation made impossible. Considering the loss to the working class of people as well as to commerce, we give this petition our indorsement.

In this connection it might be of interest to note that the chief customs inspector for the Province of Pomerania has issued an order that canned meats and pieces of cured or salted meats weighing less than 8 pounds (the importation of which the law of June 3, 1900, prohibits) can, provided it does not go inland, enter the free harbor and remain there until exported. The object of this order is to enable the foreign-bound ships to provision with the indispensable article of canned beef. It is a well-known fact that every navy and deep-sea merchantman is provisioned with American corned beef, and it thus seems that it is not considered injurious to the German sailor, whether in the navy or merchant marine, while, on the contrary, it is considered dangerous to the German landsman.

JOHN E. KEHL,
STETTIN, GERMANY, *July 17, 1903.* *Consul.*

MEAT IMPORTS AND CONSUMPTION IN GERMANY.

Since the new German meat-inspection law has been in force the importation of foreign meat, sausages, and canned-meat stuffs have decreased about one-third. This great reduction has, however, been compensated for by the increase of imported live animals for slaughtering purposes. During the first half of the present year 174,050 head of cattle, valued at 54,000,000 marks ($12,852,000), were imported by Germany. In the same period of the preceding year the number of foreign cattle imported was 148,394, valued at 44,000,000 marks ($10,472,000). Should the new tariff law go into operation in its present shape of largely enhanced rates on imported meat and live stock, the importation of foreign beef cattle and hogs, as also of meat stuffs generally, will greatly diminish and meat consumption in Germany be seriously affected thereby; but the German stock raisers will profit by the higher prices which will rule for their protected meat products.

SIMON W. HANAUER,
Deputy Consul-General.

FRANKFORT, GERMANY, *August 6, 1903.*

SANITATION OF CONGESTED AREAS.

At the annual conference of the Royal Institute of Public Health held at Liverpool yesterday, a paper was read on "Rehousing the poor on the outskirts of large cities," of which I send a synopsis for publication in the CONSULAR REPORTS.

MARSHAL HALSTEAD,
Consul.

BIRMINGHAM, ENGLAND, *July 17, 1903.*

CURE FOR CITY CONGESTION.

In the section on sanitation of congested areas, Mr. Austin Taylor, M. P., Liverpool, presided, and said that they were only on the threshold of an enormous slum problem—a monster whose outward aspect was one of bricks and mortar, but in the interior dark with the tragic fate of men, women, and especially children, whose dreary mechanical life was only ended by death. It was useless to cure plague spots in the center of the cities and to let the outlying belt grow up in a haphazard fashion. He suggested that municipalities should be allowed to buy land 3 miles outside their boundaries, where streets could be laid out on model lines, trees preserved, and a general style of architecture insisted upon. There must be expansion to cure congestion, and for that purpose he also advocated the compulsory acquirement of suitable areas on moderate terms, the reduction of interest on public loans for demolition and rehousing, and rating of vacant sites on their capital value, by which model dwellings could be erected at not greater rent than 1s. (24 cents) per room weekly.

REHOUSING THE POOR.

Dr. James Niven, medical officer for Manchester, in a paper on "Rehousing the poor on the outskirts of large cities," said it was generally recognized an effort should be made by the sanitary authorities to house as many as possible of the poorer working-class families on the outlying parts of these districts under the improved conditions of light, air, space, and construction of dwellings. So far, efforts in this direction had been the result of private enterprise and confined to persons above the laboring classes. A great impulse had already been given to the movement outward by the development of electric trams. With a view to house persons displaced by sanitary and other improvements, the Manchester corporation had purchased a considerable estate in the northern limit, which is well provided with transport facilities. A committee had just begun the development of this estate by the construction of a main road and were erecting on and adjoining this road dwellings for artisans not of the poorest class, and were taking other steps to form a new colony. Powers were being sought to enable the Manchester corporation to provide shops, schools, churches, and other institutions, but a complete scheme had not yet been framed. Meantime, the Manchester corporation were endeavoring to provide model dwellings of various types which would assist in improving the future provision of houses by private enterprise. The corporation had bought Blackley estate of 237 acres at £150 ($729.97) per acre and were erecting 80 dwellings on it at moderate rents; but a portion of the estate would not be built on, being intended for allotments. In the center of Manchester eight unsanitary areas had been dealt with, of which three were to be left open spaces, while on the other side provision had been made for 2,729 people in lieu of 3,127 displaced. Apart from the humanitarian aspect of the question, it was good finance for municipalities to remove as many people as possible from the centers of cities to a more wholesome atmosphere and all-round better conditions of the outskirts.

PURIFYING WATER BY OZONE.

Splendid results have recently been obtained at Wiesbaden and Paderborn in the purification of water by the use of ozonized air. Water of an inferior quality is thus turned into very good drinking water. Ozonizers of the Siemens type are used to treat the air.

The plant at Wiesbaden contains 48 of these ozonizers, forming duplicate groups of 24 each. A set of eight ozonizers receives an alternating current of 8,000 volts from a step-up transformer. One pole of the apparatus consists of the cooling water of the glass tube, and is earthed, while the other pole, connected to the transformers, is placed in an inaccessible position, and therefore causes no danger to the attendant. The ozonizing tubes are inclosed in a cast-iron case consisting of three parts: (1) A completely closed central portion, into which are firmly screwed the eight ozone tubes; (2) an upper part, acting as a reservoir and distributer of the air; and (3) a lower part, forming the ozone-collecting chamber. In the upper chamber, removed from all possible touch of the attendant, are fixed the terminals from the transformers. On the floor of the lower compartment are placed the high potential cylinders with their insulating glass rods, and in addition an automatic device to prevent a short-circuit through any leakage of the cooling water. This consists simply of a strip of filter paper stretched across a metal spring. If the filter paper gets moist it tears, the spring opens out and automatically places the particular ozonizer off duty.

OLIVER J. D. HUGHES,
Consul-General.

COBURG, GERMANY, *July 17, 1903.*

DISTRIBUTION OF SEWAGE ON BACTERIA BEDS.

At a meeting yesterday of the British Institute of Sanitary Engineers, held at Wolverhampton, a report was read on the "Distribution of sewage on bacteria beds," an abstract of which as it appeared in the public press I send herewith for publication in CONSULAR REPORTS.

MARSHAL HALSTEAD,
Consul.

BIRMINGHAM, ENGLAND, *July 17, 1903.*

DISTRIBUTION OF SEWAGE ON BACTERIA BEDS.

At this meeting a paper prepared by Dr. J. C. Thresh and Mr. Martin Priest on the "Distribution of sewage on bacteria beds" was the principal subject for discussion. The writers pointed out that it was now generally admitted that in the processes of sewage purification bacterial action was the most important factor with which they had to deal, and that the condition and quality of a sewage effluent would vary according to the different bacterial influences to which the sewage had been subjected. From the point of view of sewage purification, bacteria were divided into two classes, viz. anaërobies and aërobies, the anaërobies producing putrefaction fermentation, while the aërobies produced the true putrefaction, and it was the aërobiotic bacteria that they must chiefly endeavor to cultivate and employ in their sewage schemes. If bacterial treatment was the main factor in sewage purification, the proper utilization of the bacteria beds was the crux of the whole problem. The best means for the distribution of sewage on bacteria beds were: First, the so-called contact beds, in which the beds are filled with sewage, allowed to stand a certain time, then run off, and the beds allowed to aërate; second, distribution by means of alternating siphons, with or without arrangements for distributing the sewage over the whole surface of the beds; and, third, the continuous, or sprinkler, system. Many installations of the contact system for some reasons had not proved satisfactory. As regards aëration, the contact beds compared very unfavorably with the sprinkler bed; because, while the contact bed is alternately filled and emptied, the continuous, or sprinkler, bed worked under constant aërobiotic conditions, with always an ample supply of oxygen. In conclusion, the writer pointed out that the bacterial system of purification merely improved the sewage from a chemical point of view and left it nearly as impure as before from the bacteriological standpoint, and possibly, therefore, quite as dangerous, so far as disseminating germs of typhoid fever, cholera, and other water-borne diseases were concerned. Aldermen Gibbons opened the discussion and stated that at Wolverhampton they dealt with an average flow of 2,500,000 gallons every twenty-four hours and at times a much greater quantity. At the corporation sewage farm at Barnhurst they had had a tank working on the bacteria principle for thirty years, and Dr. Frankland, who had visited it, had said that the effluent was as pure as some of the water that was used for domestic purposes in London. Dr. Reid said the Wolverhampton sewage works would compare favorably with any in England, so far as results were concerned.

GERMAN FINANCIAL STATISTICS.*

During the first six months of 1903 the new emission of stocks and bonds listed in the German bourses amounted to 923,180,000 marks ($219,716,840) nominal value and 923,990,000 marks ($219,909,620) market value. Of these, 804,780,000 marks ($191,537,640) represented domestic securities and 118,400,000 marks ($28,179,200) foreign securities. The shares of joint-stock companies amounted to but 91,460,000 marks ($21,767,480) in the foregoing. During the corresponding six months of 1902 the new securities placed on the market aggregated 1,483,390,000 marks ($353,046,820). During the first six months of 1903 the number of new joint-stock companies organized in Germany was but 42, having a total share capital of 78,000,000 marks ($18,564,000).

Since the year 1899 the creation of joint-stock companies has steadily decreased, owing to business crises, which checked industrial and financial activity, more especially in the lines of metal-working industries, machine building, electrical plants, and breweries. A few of the large banking joint-stock companies have increased their share capital, having extended their business by buying out private banking concerns or taking up the business of joint-stock companies which had failed.

SIMON W. HANAUER,
Deputy Consul-General.

FRANKFORT, GERMANY, *July 12, 1903.*

BRITISH INVESTMENTS ABROAD.

In its issue of July 20 the Birmingham Daily Post calls attention editorially to "a side of the tariff controversy to which little attention has hitherto been given, yet it is one of very considerable importance, viz, the position of British holders of foreign and colonial bonds." The article is as follows:

> With that very numerous body of investors may be also placed the British merchants and manufacturers and others who have invested their capital in private or public enterprises in the colonies or in foreign countries. What will be their position should a system of preferential tariffs be adopted by the Imperial Government? Let us look at the subject more closely. The fundamental idea of the preferential-tariff scheme is understood to be this: Colonial goods imported into the United Kingdom are to be given a tariff preference over competing goods imported from foreign ports. At present the preference is to be limited to food stuffs and possibly to raw materials. In return, so it is proposed, the colonies are to give a reciprocal-tariff preference over competing goods imported into these colonies from foreign

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*Statistics covered by Mr. Hanauer's report were also received from Consul Warner, of Leipzig.

countries—this preference, by the very nature of the case, being limited to manufactured articles. As Great Britain is a free-trade country, any preferential treatment of the colonies in our ports would mean the placing of a duty on the foreign competing articles; but should Great Britain adopt protective tariffs all round, then the tariff on colonial imports is to be lower than the tariff placed on the competing material imported from foreign countries. In either case, the foreigner is to be handicapped for the sake of the colonial. When we turn to the other side of the proposal, we find that the colonies, which have already very high protective tariffs, are expected either to raise their tariffs as against the foreigner or lower them as in favor of the mother country. Our present point has to do with the preference to be given at home, and a simple illustration will take us at once to the question we desire to raise. Our meat imports into the United Kingdom—including beef, mutton, and pork—come from the colonies to the extent of 20 per cent of the whole and from foreign countries to the extent of 80 per cent. The proportion is important in itself, if foreign meat is to be taxed on reaching this country; but that is not the immediate consideration, which is this: In 1902 we imported from Argentina 93,000,000 pounds weight of beef and 152,000,000 pounds weight of mutton. From New Zealand we imported in the same year 26,500,000 pounds weight of beef and 183,125,000 pounds weight of mutton. We also receive beef and mutton from Australia, though not to the same extent. Now, under preferential tariffs, the exporters who send us meat from Argentina are to be penalized and the exporters who send us meat from New Zealand are to receive a bonus. But who are these exporters? Indirectly they are the capitalists who provide the means of commerce—the railways, the docks, the banking facilities, and the like. But these capitalists are not New Zealand colonists on one side and Argentine "foreigners" on the other. They are to a large extent British investors who have invested their money in both of these countries.

What is the exact extent of British investments in New Zealand and in Argentina we have no means of discovering, but some approximate estimate is possible. In 1902 the outstanding external debt of the Argentine Republic, including "national loans," was £46,197,424 ($224,819,763). This took no notice of provincial and other debts of £30,212,000 ($147,026,698). How much of this £76,409,424 ($371,846,461) had been borrowed from British investors we have no information, but it must be a very large proportion. It is well known that the more important commercial and agricultural banks within the Republic are largely in the hands of London financiers. For example, there are the London and River Plata Bank, the London and Brazilian Bank, the British Bank of South America, and others. It is further to be noticed that the Argentine Great Western Railway Company and the Argentine Northeastern Company are practically English companies, while the Argentine Northern Central Railway Extension is financed by loans largely raised in this country. It would, indeed, be safe to say that the commerce of the Republic is maintained in an active condition by the use of British capital. Any alteration of our fiscal system which imposed a penalty on Argentine commerce—say, the carrying trade and the meat-exporting industry—would be, in effect, imposing a penalty on British investors in the Argentine Republic loans and industries. On the other hand, we find that the public debt of New Zealand in 1902 was £51,837,631 ($252,267,830). Here, again, there is no return available to show how much of that debt is represented by loans from British investors, but certainly the greater part of the whole has been found by capitalists in the mother country. In other words, both New Zealand and the Argentine Republic are largely financed with British money. Both countries now find for their beef and mutton a free market in Great Britain. Roughly speaking, they send about an equal quantity; but, under a system of preferential tariffs, the British capitalist who has invested his money in New Zealand loans is to be given a bonus at the expense of the British capitalist who has invested his money in the Argentine Republic. Here, it will be seen, it is not a question of the colonial being favored over the foreigner; but it is a case of preferential treatment in favor of one British bondholder over another British bondholder. We have taken this particular case because it offers an illustration of a tangible kind, but it is only offered as an illustration. What we ask attention to is the position of the British investor who has put his money in foreign stock or other securities, contrasted with the position of the British investor who has selected colonial stock or other security. American railways, for instance, have attracted vast sums of English money. In all parts of America the railways are in a preeminent degree essential to the export trade of the country; and anything which struck a blow at the export trade would strike a blow at the railways, and hence at the dividends of the shareholders. As far as the shareholders are British subjects, any such blow would be a blow at our own countrymen. Of course, a British investor who invests in colonial or foreign security must take the risks of the security; but the point of interest here is that it would be the British Government which would, by a system of preferential tariffs, increase the risk to one set of investors and diminish the risk to another set. How far the investor would suffer it is quite impossible to say; but, seeing the vast amount of British money invested in the colonies and in foreign states, the effect on those investments of any sweeping reversal of the fiscal policy existing when the investments were made becomes a proper subject for very close examination.

It is somewhat remarkable that official information on this subject of foreign and colonial investments is of the most meager description. Still, there are some instructive figures available. The Statist for last week published an article on our national trade in which occur some instructive returns collected from the Statistical Abstract for the United Kingdom presented to both Houses of Parliament. In the year 1880–81 the income derived from our Indian, colonial, and foreign investments, as ascertained for income-tax purposes, amounted to less than £30,000,000 ($145,995,000). By 1890–91 the total reached a little under £58,000,000 ($282,257,000), and the return for 1900–1901 showed over £60,000,000 ($291,990,000). The latest return for 1901–2 reaches the total of £62,600,000 ($304,642,900). Assuming that the yield on our Indian, colonial, and foreign investments averages about 5 per cent, the income thus shown would indicate that our investments abroad had risen from under £600,000,000 ($2,919,900,000) in 1880–81 to the enormous sum of £1,157,000,000 ($5,630,540,500) in 1890–91, or very nearly double in the course of ten years. Including the capital of private traders, the investments abroad in the ten years referred to amounted to a much larger sum. Since 1891 the overflow of British capital into Indian, colonial, and foreign countries was greatly checked by the unfavorable financial position of many of those countries. Still, the sum total in 1901–2 amounted to £1,252,000,000 ($6,092,858,000). Three points are worth notice: First, the vastness of our foreign investments goes far to explain how it comes about that we receive as imports goods so much exceeding the goods sent out as exports. The balance is, in fact, paid for on the spot by the interest on investments. Second, the falling off of our foreign investments in the years 1891–1901 was accompanied by a great increase of capital expenditure at home. Third—and this is the point of interest now before us—the question arises how this gigantic investment of capital in India, in the colonies, and in foreign countries is likely to be affected should the proposal of preferential tariffs come into operation. If there is to be a check placed on importations from foreign countries, that must, it would seem, necessarily affect the value of British investments in those countries—certainly of investments representing the capital of private traders. In any case it would greatly disturb—at any rate for some years—the employment of the income derived from foreign investments. We can not trace any official distinction in the returns between the actual amounts invested in India, in the colonies, or in foreign countries, but it seems fair to assume that of the above-shown £1,200,000,000 ($5,839,800,000) capital at least one-half would be invested in foreign countries. If so, one-half of our income from oversea-invested capital appears to be in peril of a certain toll being levied upon it when it takes the shape of merchandise imported into the United Kingdom. We have not yet seen this side of the question at all investigated, but it seems to us to be one of very considerable importance. As far as the illustrations from Argentina and New Zealand hold good, preferential tariffs would mean a differentiation by the Imperial Government between British capital invested in the colonies and British capital invested in foreign states—a condition of things difficult to justify.

MARSHAL HALSTEAD,
Consul.

BIRMINGHAM, ENGLAND, *July 22, 1903.*

HOP INDUSTRY OF AUSTRIA-HUNGARY.

The hop crop of Austria-Hungary in 1902 amounted to 9,032,000 kilograms (19,870,400 pounds), while that for 1901 amounted to 15,669,900 kilograms (34,473,780 pounds), a decrease in the crop of 1902 of 6,668,000 kilograms (14,669,000 pounds). Of the total crop of 1902, Bohemia produced 6,682,000 kilograms (14,634,400 pounds), of which 4,276,900 kilograms (9,409,180 pounds) were produced in the Saaz district.

In December, 1902, the price of hops ranged in the several districts of the Empire from 18.5 cents per pound in South Styria, the lowest figure, to 25 cents per pound in Saaz, the highest figure.

The following table shows the itemized quantities exported to various countries in 1902 and 1901:

Country.	1902.		1901.	
	Kilograms.	*Pounds.*	*Kilograms.*	*Pounds.*
Germany	3,224,900	7,094,780	7,911,300	17,404,860
Great Britain	593,200	1,305,040	462,300	1,017,060
Sweden	278,100	611,820	335,900	738,980
Belgium	180,400	376,880	262,000	576,400
Russia	133,500	293,700	207,600	456,720
France	111,000	244,200	135,900	298,980
Switzerland	163,400	359,480	173,600	381,920
United States	160,800	353,760	162,300	357,060
Netherlands	72,800	160,160	112,700	247,940
Balkan States	67,400	148,280	70,500	155,100
Other countries	229,600	505,120	324,300	713,460
Total	5,125,100	11,473,220	10,158,400	22,348,480

The large falling off in the exports of 1902 is due chiefly to the small crop in this country, while at the same time Germany produced very large crops. Almost the entire decrease in the export was caused by the diminished demand from Germany.

ETHELBERT WATTS,
Consul.

PRAGUE, AUSTRIA, *July 22, 1903.*

BREWING INDUSTRY OF AUSTRIA.

Production.—From 1855 to 1873 the production of beer in Austria had risen from 5,000,000 to about 12,750,000 hectoliters (133,085,000 to 336,816,750 gallons). In that year a reaction took place in consequence of which the production up to 1880 fell to 10,500,000 hectoliters (27,737,850 gallons). Since 1880 the growth of the brewing industry (which turned out 20,104,000 hectoliters, or 555,812,680 gallons, in 1902) was not further interrupted until the last brewing season, which shows the remarkable decrease of 476,579 hectoliters (12,581,685 gallons).

Tax.—The revenue derived from the beer tax in Austria amounted in 1901–2 to 74,645,651 crowns ($15,153,067), against 76,075,000 crowns ($15,443,225) in 1900–1901. The new provincial beer tax of 1.70 crowns per hectoliter (34.8 cents per 26.417 gallons) came into operation in 1903. The proceeds from this tax in Bohemia will not go into the Government treasury, but will be applied to the long-promised increase of the salaries of public teachers. In this connection it may be mentioned that since last year the Erhard Schaup checking apparatus has been adopted. The automatic control of this apparatus has great advantages over the previous methods of checking the beer production.

ETHELBERT WATTS,
PRAGUE, AUSTRIA, *July 22, 1903.* *Consul.*

GERMAN PATENT LAW.

For the information of Americans who wish to obtain patents for their inventions in Germany, and who through ignorance of the German law and practice at the Imperial Patent Office frequently write to consular officers for information which it is difficult to make clear and complete by correspondence, the following translation of a synopsis of the German law and the more important details of usage at the patent office is submitted.

Patents on inventions are issued in the German Empire in accordance with the patent law of April 7, 1891. This law came into force on October 1, 1891, replacing the law of May 25, 1877, and is applied also to patents which had been previously granted under the older law.

German patent office.—The Government department which deals with the granting of patents is the Kaiserliche Patent-Amt in Berlin. This office receives the applications and examines them as to correctness in form, as well as to originality and suitability for patenting of the object for which a patent is asked. Applications for annulment must also, in the first instance, be addressed to the patent office.

Suitability for patenting.—The object for which a patent is applied must, according to section 1 of the patent law, always be an invention, and as the law does not more fully explain the meaning of "invention," the Imperial Patent Office decides in each individual case according to its own judgment whether it is an invention or not.

If one application contains several inventions independent of one another, a separation is necessary.

As a condition for suitability for a patent, it is presumed that the invention (1) is new at the time of application and (2) can be utilized, industrially or in trade.

An invention is not considered new if at the time of application it has already been described in public papers during the last hundred years, or is so openly used in Germany that thereby the use by an expert seems possible.

Patent papers officially issued at home or abroad are also, from the date of their publication, considered as constituting a hindrance to the granting of a patent, even if naming the same party as the German application.

Additional patents.—Patents on inventions proposing an improvement on an invention already applied for or patented can be applied for by the patentee of the main invention or the owner of the patent already granted. They are free from fees after the second year and expire together with the chief patent. In every other respect applications for additional patents are subject to the same conditions as the chief patent.

Inventions excluded from patenting.—Inventions the use of which is contrary to law or to good morals, or which refer to articles of food or medicine or to materials to be manufactured chemically, unless the inventions refer to a particular method of making them, are excluded from obtaining a patent.

Applicants.—There is no restriction in the law as regards the person of the applicant; firms can also be applicants.

Those who have first given notice of the invention have a prior claim to the granting of the patent. If, however, the essential contents of the application be stolen from some party, no claim for the granting of a patent can be made, provided the party suffering files an objection in due time.

Aliens.—Aliens can claim the protection of the patent law just the same as natives, but they must appoint an attorney residing in Germany.

If the Imperial Patent Office, after due examination, considers an invention to be suitable for a patent, it orders the publication of the title and the date of application in the Imperial Gazette (Reichsanzeiger).

The description and any drawings belonging to it are laid out for public inspection for two months from the day of this publication. The preliminary protection of the invention commences from the day of the publication. [It should be noted that a French patent must be applied for before the publication of the respective German application.]

Objections.—During the period of publication an objection can be filed against the granting of a patent on account of its unsuitability, or the claim that it has been stolen.

If no objection is raised or if the same be not sustained, and if the official examination of the invention, repeated after its publication, results favorably, the patent is granted and the patent office causes the description and drawings to be printed.

Complaints.—If the patent office arrives at a decision to refuse an application, a complaint can be filed by the applicant within one month after receipt of notification of such refusal.

Life of a patent.—The legal duration of a chief patent is fifteen years from the date of application. Additional patents expire at the same time as the main patent.

Official fees.—Together with the application a fee of 20 marks ($4.76) is to be paid in, and during the period of publication the first annual fee of 30 marks ($7.14) must be paid. After that there are due on the chief patent annual fees amounting to 50 marks ($11.19) for the second year, and increasing by 50 marks from year to year. Date of payments becoming due is the anniversary of the date of application. Payment can be made without an extra fee within six weeks after becoming due, and within the following six weeks with an extra fee of 10 marks ($2.38). There is no extension of time for the payment of the first year's fee.

Complaints are subject to a legal fee of 20 marks ($4.76), and every application for annulment or withdrawal of a patent must be accompanied with a payment of 50 marks ($11.19).

Designation of patented objects.—The designation of patented articles is not required by law, but it assists the owner of the patent in the prosecution of parties infringing the patent. The usual designation is D. R. P., No. ——— (German imperial patent No. ———).

Withdrawal of a patent on account of nonmanufacture.—No limit of time is prescribed in Germany for the manufacture of a patented article, but according to section 11 of the patent law a patent can be canceled after expiration of three years after publication of the granting of the same if it has not been exploited in Germany to an appropriate extent up to the time of making the application for withdrawal.

As to the appropriateness of the extent of exploitation, the patent office decides according to its own judgment and according to the trade conditions at the time being.

Declaration of annulment.—Patents can be declared annulled on application if the article is not suitable to be patented or if the invention is the subject of a patent obtained by a previous applicant, or if the essential parts of the patent have been illegally taken from some other person.

The cancellation of a patent on account of theft can only be applied for by the injured party.

Time limit for claim for annulment.—An application for the cancellation of a patent on account of its lacking novelty or suitability for patenting can only be made within the five years after publication of the granting of the same. There is no limit of time for filing complaints for other reasons.

Appeal to the imperial court of justice.—An appeal to the imperial court against a decision of the patent office as to cancellation or withdrawal of a patent must be made within six weeks after receipt of the decision of the patent office, giving full explanation of the reasons for appeal. [According to a recent decision of the imperial court, the detailed explanation can be presented later.]

Deliberate intention or gross carelessness in infringing upon a patent renders the offender liable to the payment of damages. Willful offenders in this respect can, on application of the injured party, be punished by a fine not exceeding 5,000 marks ($1,190) or imprisonment not exceeding one year.

A patent does not take effect as regards those persons who have in this country commenced using an invention before the patent was applied for, or who made the essential preparations for doing so.

The illegal designation of an article as being patented is also punishable by a fine not exceeding 1,000 marks ($238).

Withdrawal of application for punishment.—The application for the punishment of a person for infringement of patent rights can be withdrawn.

Claims outlawed.—Claims for damages for infringement are barred after three years. Demands for punishment become outlawed in accordance with section 67 of the penal code in five years and within three months after learning of same.

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Assignment.—A patent can be passed on to others, with or without restrictions, by transfer or by inheritance. Although the law does not require a notice to be filed with the patent office regarding the transfer of a patent, it is nevertheless to be recommended in order to avoid difficulties in cases of dispute.

For the entry of the transfer of patent rights it is necessary to produce a certified document of transfer, which must also contain the application for transfer of the patent. A document drawn up in Germany must bear a certificate by a notary public or a court. Documents signed abroad must be legalized by a German consul.

Requirements for filing application.—(1) A power of attorney not certified; (2) a description in duplicate; (3) if necessary, one or more drawings, one made on cardboard and the others on linen.

Drawings.—Length of sheet to be 33 centimeters (13 inches); width, 21 centimeters (8.3 inches); marginal line, 2 centimeters (0.8 inch). The drawing on linen, 33 centimeters (13 inches) long, can be of any width. The figures must be made in black, with heavy lines. The illustrations on copying linen may be made in colors.

Payment of fees and taxes.—Application fees and other charges which accrue during the period while an application for patent is under consideration must be paid at the Imperial Patent Office by or through a lincensed patent attorney who resides in Germany. After the patent has been granted, the annual fees or taxes thereon may be paid by a patentee resident in another country by postal remittance addressed as follows: "An das Kaiserliche Patent-Amt, 33 Luisen-Strasse, Berlin." Checks on banks are not accepted for such purposes.

FRANK H. MASON,
Consul-General.

BERLIN, GERMANY, *July 18, 1903.*

PATENT MEDICINES IN GERMANY.

According to the Vossische Zeitung, of Berlin, the federal council (Bundesrath) has agreed upon minimum regulations for the traffic in secret remedies (proprietary or so-called patent medicines), and will request the confederated German governments to have them go into effect at the beginning of next year, provided the several States have not already more severe regulations, in which case these shall continue.

The federal council has made the following two lists of secret remedies:

List A.—Eagle fluid, amarol, American coughing cure (Lutze), antiarthrine and its preparations, Duflot's antigout wine, antemelline, Said's antirheumaticum, anti tussine, Schiffmann's asthma powder, Zematone asthma powder and asthma cigar ettes, White's eyewater, Schuetze's skin ointment, Bilfinger's balsam, Lampert's balsam, Spranger's balsam, Thierry's balsam, Konetzki's tapeworm remedy, Bohnert's Indian cure for sore legs, Hohl's blood-purifying powder, Wilhelm's blood-purifying tea, Lampert's croup liniment, Battle & Company's bromelia, Tanzer's balsam for hernia, hernia ointment of Valtenberg's pharmaceutical bureau, Ayer's cathartic pills, Djorat Bauer's corpuline, Elixir Godineau, Embrocation Ellimans, Omanter remedies, Cassarini's powder, Hess's eucalyptus remedy, Mountain Tea, Schmidt's hearing oil, Lueck's herb honey, gout and rheumatism liquor, glandulene, Lindner's glycosolvole, Spranger's Heol ointment, Jacobi's remedial draughts, especially his King's draught, Homeriana, Injection Brou, Injection au matico, Locher's kalosine, Weidemann's Knoeterich tea, Richter's Congo pills, Lueck's herb tea, Ulrich's herb wine, Altona crown essence, Fernet's essence of life, Liqueur du Docteur Laville, Richter's loca pills, Tacht's stomach pills, Brady's stomach pills, Spranger's stomach drops, Mother Spiegel's pills and sirup, Dressel's nerve fluid, Lieber's nerve force elixir, Pastor Koenig's nerve strengthener, orffine, pain expeller, Bock's pectoral, Indian pills, Morison's pills, Redlinger's pills, Pilules du Docteur Lavillie, Marienbad reducing pills, Liebouit's regenerator, Remedy Alberts Sanharo Salvol, Warner's Safe remedies, Sanjana preparations, Ayer's sarsaparilla, Richter's sarsaparilla, Weissmann's water, Brandt's Swiss pills, Pagliano's sirup, spermatol, Lueck's special tea, Richter's stomakal, Tarolin capsules, tuberkeltos, Barella's universal stomach powder, Vino Mariani, Vulneral cream, Dick's licensed wound salve, Lah's Zamba capsules.

List B.—Locher's antineon, Reichel's vegetable eye balsam, Noortwyck's diphtheria remedy, Count Mattei's remedy, Sautar's Geneva Star remedy.

These lists may be increased by the federal council.

For the regulation of the sale of these remedies the following rules are prescribed:

The vessels and the wrappers in which these remedies are sold must contain the name of the remedy and the name of the manufacturer; also the name of the firm where the same is sold, and the price. These rules do not apply to the wholesale trade.

It is prohibited to have testimonials, advertisements, etc., appear upon the vessels or the wrappers, or to hand such matter to the purchaser separately or in any other manner.

The druggist is obliged to ascertain to what extent the rules relative to the sale of drastic remedies apply to the article sold.

The secret remedies (contained in both lists) about which the druggists can not ascertain whether their composition is such as to permit the sale without a physician's prescription can only be sold upon a written prescription, dated and signed by a physician, dentist, or veterinary surgeon; in the latter case, however, only if the remedy is intended for animals. A repetition of the sale requires a new prescription. Remedies which can only be sold on prescriptions must bear the inscription on the vessels or the wrappers, viz: "To dispense on physician's prescription only."

In the Kingdom of Prussia steps have been taken for regulating the sale of secret remedies in conformity with the resolutions of the federal council, and the first presidents of the several provinces have been instructed, after the provincial council has agreed to it, to issue police rules whereby public advertising of the secret remedies contained in lists *A* and *B* is prohibited after January 1, 1904.

The Government presidents of the provinces have been instructed to make all those concerned acquainted with the new regulations.

RICHARD GUENTHER,

FRANKFORT, GERMANY, *July 31, 1903.* *Consul-General.*

MACHINERY INSURANCE IN GERMANY.

To the numerous branches of the insurance business—as, for instance, life and fire insurance, insurance against burglars, against damage caused by hail, bursting of water pipes, etc.—quite recently a new and important one has been added in these parts, viz, the insurance of machinery.

The Stuttgarter Mit-und Rückversicherungs Aktiengesellschaft (Mutual Reinsurance Company of Stuttgart) is the first to take up this, to Germany, novel idea. Among the branches of trade which are likely to take an interest in this insurance, the electric industry ought to be mentioned in the first place; its extensive wire and cable nets, its many masts and poles, etc., are exposed to the severity of storm and weather all the year round, so that in spite of every care and attention serious harm may be done at any time. But other branches of trade will find this sort of insurance a benefit. The blown-down chimney of a factory or a boiler explosion may cause serious harm to machine houses, or an inundation may damage turbine wheels and other machinery. In such cases the benefit of the injured parties being insured is apparent.

The company also insures against damage done to machinery by negligence or inexperience on the part of workmen. It is almost impossible to have at all times well-trained and experienced hands in one's employ, and it is by no means an infrequent occurrence that machinery comes to more or less serious harm through the fault of some hand or other, and the chances of the owner of a factory being able to recover from such loss are very few and far between. The prospectus of the company also includes damages caused by deficiency of the material out of which machines are manufactured if such faults are detected after the term of the manufacturer's guaranty has elapsed. Some machines work beautifully for years and then break all of a sudden, owing to a trifling fault in the material. In many cases the manufacturer of the machine which has suddenly come to harm will do his best to repair damages, but this is not always possible, and either a lawsuit, with all its anxieties and uncertainties, will have to be gone through with or the loss can not be made good.

This new insurance departure will include not only machinery in the strict sense of the word, but also all sorts of apparatus, belts, chains, pipes, cables, locks, foundation walls, etc.

In support of loss claims, the bill of repairs or of the new machinery purchased to replace the damaged machinery must be produced and submitted. The premium will depend upon the total value of the insured machinery, and will be different for machinery which is stationary and under cover from that which will have to be paid for machinery exposed to the open air and for movable machinery.

OLIVER J. D. HUGHES,
Consul-General.

COBURG, GERMANY, *August 5, 1903.*

FIRST STANDARD-GAUGE ELECTRIC RAILWAY IN PRUSSIA.

Berlin has entered definitely upon the employment of electrical traction for suburban service on the State railways of standard gauge. Since the middle of May experiments have been in progress on the line from the Potsdamer railway station in Berlin—the focal point of suburban traffic within the city limits—to Gross Lichterfelde, a distance of 5½ miles. These experiments having proven entirely successful, regular traffic was begun on July 15 with trains of three cars each, which depart in each direction every ten minutes and are permitted by ordinance to make a speed of 60 kilometers (37.2 miles) per hour. The current is supplied from the southwestern power station of the already existing circular railway (Ringbahn) and is transmitted over an insulated third rail laid beside the track, whence it is taken up by a contact shoe connected with the motor.

Each train is made up of one second and two third class cars, each 63 feet long by 9 feet wide and which weigh—all three together—128 tons and seat 200 passengers. The second-class car is at the middle of the train and carries no motor. Each third-class car carries a motor at one end and these, being put at the front and rear of each train, enable it to run forward or backward as desired. The cars are new and as handsomely finished as their purpose would justify. They are equipped with heating apparatus for winter and would be considered comfortable and up-to-date even in the United States.

The opening of this line is noteworthy because it marks the beginning of a general change from steam to electricity for the important and rapidly growing suburban service of Berlin. So comfortable, rapid, and convenient have the electric street-railway connections become—especially the overhead and subterranean line which was opened in February, 1902, and described in a report of this series at that time (ADVANCE SHEETS No. 1302, March 29, 1902)—that aside from all considerations of economy the steam lines are constrained to go over to the new, clean, convenient, and more economical system of traction in order to hold their traffic and secure their business for the future. A second line, which leads to Cöpenick—several miles distant up the Spree—is in process of conversion to electricity, and will inaugurate the new method of traction during the summer.

FRANK H. MASON,
Consul-General.

BERLIN, GERMANY, *July 23, 1903.*

STREET RAILWAYS OF LEIPZIG.

In the spring of the year 1872, the first street-car line in this city was opened to the public. The cars were, of course, drawn by horses—as they were at that time in almost every other place. It continued in operation until 1895.

CONCESSIONS.

In 1895 the Leipzig city council, the Minister of the Interior concurring, granted concessions to two companies to build electrical street railways upon conditions almost identical, the principal features of which are: The concessions extend forty years from the date the lines were first put into operation (in 1895 and 1896, respectively), at the end of which time all the lines and rolling stock which were then built, or which may thereafter have been built, are to revert to the city, with the exception of the grounds, buildings, machinery, and those motor cars which shall have been built within the last preceding five years.

Rights of city.—The city has the right, however, to buy such grounds, buildings, machinery, and cars at the price at which they are assessed. In addition thereto, the city has the right to take over the lines after the expiration of twenty years upon the payment of the full assessed value of the grounds, buildings, machinery, and those motor cars which shall have been built in the five years immediately preceding, and the full assessed value of the roadbeds and rolling stock; after twenty-five, thirty, or thirty-five years, in addition to paying the full price for the grounds, etc., 75, 50, or 25 per cent of the assessed value of the roadbeds, etc., respectively. The city must also pay, should it take over the lines, or either of them, at the end of twenty years, thirteen times the amount the net profits have averaged during the five years just preceding; after twenty-five, thirty, or thirty-five years, ten and three-fourths, eight, or four times the average net profits, respectively. From the receipts, the running expenses, 4.5 per cent for dividends upon the capital stock, and a like sum for interest on the bonds are to be deducted in order to determine the net profits.

Forfeiture of rights.—The right of either company, or both, may be forfeited should one or both of them discontinue running cars along all of the lines or any part or parts thereof without the sanction of the local authorities; if they fail to comply with any ordinance within a reasonable time after having been requested to do so in writing; if the funds for running expenses be attached or are otherwise made away with, or if the Royal Ministry should advise that such action be taken.

Stockholders' rights.—If, on account of any of the foregoing reasons, the city should take over the roads or either of them, it must pay to the stockholders of the company or companies an amount which a specially constituted board of experts may determine the plants, equipments, grounds, buildings, etc., to be worth.

Payments for street rights.—After the first three full years the lines are in operation, they must pay the city for the use of the streets 2 per cent of the gross receipts, which amount will be increased 1 per cent after the lapse of every five years, until it reaches 5 per cent. The lines must pay for paving and repairing the streets where new tracks are put down, in the one instance, and where the running of the cars is responsible for the wear and tear thereof, in the other.

CAPITAL.

The Grosse Leipziger Strassenbahn Gesellschaft, the larger company, known as the "Blue Line," is capitalized at 10,000,000 marks ($2,380,000), which is divided into 10,000 shares of 1,000 marks ($238) each. It has a bonded indebtedness of 10,000,000 marks ($2,380,000), bearing 4 per cent interest per annum, which is divided into 6,500 bonds of 1,000 marks ($238) each and 7,000 bonds of 500 marks ($119) each. The company has paid regular dividends to its stockholders since 1896, when it began operations, as follows: For the years 1896, 1897, 1898, 1899, 1900, 1901, and 1902, 6, 8, 8, 8, 7, 5½, and 5½ per cent, respectively.

The Leipziger Elektrische Strassenbahn Gesellschaft, the other, known as the "Red Line," is capitalized at 6,250,000 marks ($1,487,500), which is divided into 6,500 shares of 1,000 marks ($238) each. It has a bonded indebtedness of 4,000,000 marks ($952,000), bearing 4 per cent interest per annum, which is divided into 2,000 bonds of 1,000 marks ($238) each and 4,000 bonds of 500 marks ($119) each. Regular dividends have been paid the stockholders since its organization, as follows: 1895 to 1899, 4 per cent per annum; 1900, 3 per cent; 1901, 2 per cent; and 1902, 2 per cent.

EQUIPMENT AND ROLLING STOCK.

The overhead-trolley system is used by both companies. The trolley wires are suspended in the air by wires fastened to the houses on either side of the streets. Where there are no houses, iron posts, located perhaps 2 feet in from the curbstone, are used as supports. The tracks are laid with such exactness and precision that there is little delay or annoyance caused by the trolley arm becoming displaced.

The lines have 211.57 kilometers (131.17 miles) of tracks, including those in the various car sheds, 124.51 kilometers (77.2 miles) of which belong to the larger company and 87.06 kilometers (53.97 miles) to the smaller. The former has had, for several years past, its own car shops. It has 275 motor cars and 112 closed and 30 open trailers—in all, 417 cars in use. The smaller company has 130 motor cars and 20 closed and 30 open trailers—in all, 180 cars in use. The smaller company's cars are fitted with the ordinary hand brakes, while those of the other (the Blue Line) have the latest Westinghouse air brakes attached, in addition to the hand brakes. All cars are lighted by electricity, oil lamps being sometimes placed in one corner at either end, but, strange to say, none of the cars are heated, even in the coldest days in winter. In winter the car floors are covered with straw, and strips of cheap cotton-plush cloth are hung before the windows to keep at least some of the cold air off the passengers' backs.

AUTOMATIC SIGNAL BOXES.

An automatic signal box was first introduced by the smaller company last year. These boxes are placed at the crossings of electric street railways to warn motormen of the approach of cars in another direction. They have been found to be very satisfactory by both companies, as they are no longer compelled to station flagmen at the crossings or to have the conductors run forward to see if the way is clear.

TRAFFIC AND SERVICE.

Cars are run from 5.17 o'clock in the morning until midnight, upon schedules varying from 4 to 15 minutes apart. Municipal ordinances prescribe that street cars shall not run at a higher rate of speed than 9 miles an hour in the business sections; with trailers, 7.2 miles; and in the suburbs, 15 miles, or 12 miles with trailers. Cars are not to be stopped at every corner to let passengers on or off, but at places perhaps 250 yards or less apart, marked for the guidance of the public by iron signposts placed a foot or two in from the curbstone.

To each motor car there is a motorman, who is forbidden to talk with passengers, and a conductor, whose duty it is to be on the back platform every time the car stops to help passengers on or off. A municipal ordinance requires that when a trailer is attached another conductor must be carried to look after it. Trailers and motor cars are not connected by a passageway and passengers are not allowed to go from one to the other without paying an additional fare. There are 20 seats in each car and when all are taken no more passengers are allowed inside, as the aisles must be kept clear.

There are a certain number of standing-room places on the front and rear platforms—perhaps 15 on an average. When these are taken and the inside is full, the conductor hangs out at the rear end of the car by the entrance a sign "Occupied," and no more stops are made to take on passengers until some are first let off.

FARES.

The fare for a single trip is 10 pfennigs (2.38 cents), which entitles one to a free transfer. Passengers carrying large baskets, bundles, etc., must pay a full fare for such.*

The Red Line issues six tickets for 50 pfennigs (11.9 cents). Both lines issue commutation tickets good for three, six, and twelve months, respectively. Postmen and telegraph and messenger boys are carried by contract, the Imperial Government paying a yearly sum therefor. More than seven at a time, however, may not ride on the same car.

All employees of the city, as well as those connected with the police department, when in uniform, are entitled to ride upon the front platform free of charge, but never more than two at a time. In addition thereto, a large number of the city officials—at the present time 560—are given "annual passes."

To school children under 15 years of age are issued special cards, which are good only upon the lines running between their respective homes and the schools they attend and between certain hours of the day. Under no circumstances are these children allowed to get on or off cars while they are in motion.

In the year 1902 the cars of the Grosse Leipziger Strassenbahn Gesellschaft traveled 14,399,902 kilometers (8,927,939.24 miles) and received 4,241,973.83 marks ($1,009,589.77) for carrying 45,007,637 passengers. The company's receipts were 9.4 pfennigs (2.24 cents) per passenger and 29.5 pfennigs (7.02 cents) per car kilometer (0.621 mile).

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*A pernicious habit on the part of many, which may be said to have almost become a local custom, is that of feeing conductors. This is practiced by even those who are in most moderate circumstances. A passenger paying the regular 10-pfennig fare will, at the time the fare is paid, hands the conductor an additional 5 pfennigs (1.19 cents).

The cars of the Leipzig Elektrische Strassenbahn Gesellschaft during the same period traveled 565,004 kilometers (350,302.48 miles) and received 1,659,407.95 marks ($395,062.86) for carrying 18,160,928 passengers. The receipts of this company were 9.1 pfennigs (2.16 cents) per passenger and 26.02 pfennigs (6.23 cents) per car kilometer.

WAGES.

The wages of a conductor is 84 marks ($20) per month for the first year's service; the same amount is paid a motorman for the first six weeks he works. After their respective apprentice terms have expired they are paid from 90 marks ($21.42) to 120 marks ($28.52) per month, the amount being fixed by the length of time they have been employed. The men are given one day off in every six, seven, or eight, depending upon the number of hours each one is compelled to work daily. A working-day is usually from ten to twelve hours.

CLEANING AND REPAIRING STREETS.

In the expenses are included the cost of new materials, repairs, and cleaning and repairing the streets. As to this last mentioned, it should be said that the streets are cleaned and sprinkled by the city government, for which services the railway companies are charged as follows: For sprinkling and cleaning streets paved with asphaltum, granite blocks, macadam, and wood blocks, 3 pfennigs (0.7 cent), 2⅓ pfennigs (0.6 cent), five-sixths of a pfennig (0.2 cent), and 3 pfennigs (0.7 cent) per square meter (10.7 square feet) per month, respectively, and, in addition thereto, 5 per cent for supervising the work. Last year the Blue Line paid 76,416.95 marks ($18,187.25) and the Red Line 48,663.76 marks ($11,581.97) for this purpose. Street paving and repairing is done by contract. The city, however, superintends the work, to see that it is properly done, and for this service charges 5 per cent of the contract price. Last year the Blue Line paid 239,502.15 marks ($57,001.51) for this purpose, and the Red Line 138,267.21 marks ($32,907.60).

In winter when the snow falls the street-car companies must keep their respective tracks clear, and for this purpose snow plows are used. The Blue Line has 15 such plows and the Red Line 6. The snow is piled on either side of the tracks and carted away by the city, which charges the street-car companies from 1.80 marks (43 cents) to 2.75 marks (65 cents) per wagonload containing about 2 cubic meters (71 cubic feet), the price depending upon the length of the haul. Last year the Blue Line paid 9,723.85 marks ($2,314.28) for having snowed cleared away.

INSURANCE OF EMPLOYEES.

For the benefit of those employees whose wages do not exceed 2,000 marks ($476) per annum, sick, accident, life-insurance, and assurity funds are established. These are also charged to the expense accounts, as is also the cost of the employees' uniforms, each man being provided with at least one uniform, two caps, an overcoat, etc., per annum, except, however, those who are working for the first year, from whose wages 10 pfennigs per day is deducted to pay for the uniforms. Under taxes are included the 2 per cent of the total receipts, which were mentioned in the paragraph entitled "Concessions," taxes upon real estate, revenue stamps, etc.

FINANCIAL STATEMENT.

The condition of the two railway companies at the end of the calendar year 1902 is shown in the following statement:

Debit.	Blue Line.	Red Line.
Salaries	$278,335.48	$107,710.44
Expenses	296,370.18	136,566.67
Taxes	35,917.36	14,995.58
Interest account	98,175.54	45,431.32
Gross profits	309,391.65	94,834.40
Total debit	1,018,190.21	399,538.41
Credit (total income)	1,018,190.21	399,538.41

BRAINARD H. WARNER, Jr.,
LEIPZIG, GERMANY, *July 9, 1903.* *Consul.*

FLOUR AND WHEAT IN AUSTRALIA.

The imports of wheat and flour into Australia from January 1 to June 30, 1903, are equivalent to 10,276,349 bushels, or 275,259 tons, of wheat. This total consists of 7,399,421 bushels of wheat and 59,936 tons of flour. The following summary shows the quantities (reduced to the equivalent in wheat) received at Melbourne, Sydney, Newcastle, and other places:

From—	Melbourne.	Sydney and Newcastle.	Other places.	Total.
	Bushels.	*Bushels.*	*Bushels.*	*Bushels.*
Pacific coast	2,782,257	3,583,317	480,013	6,845,587
New York	154,604	665,144	208,896	1,028,644
India	103,635		7,405	111,040
Argentine Republic	445,274	1,300,344	460,692	2,206,310
London	14,400	70,368		84,768
Total	3,500,170	5,619,173	1,157,006	10,276,349

The total to all ports as stated above is equivalent to 275,259 tons of wheat. Adding about 51,750 tons to arrive from the Argentine Republic, and about 5,800 tons to arrive from the Pacific coast, the total quantity already provided for is equivalent to about 332,800 tons, or 12,424,500 bushels.

JOHN P. BRAY,
Consul-General.

MELBOURNE, AUSTRALIA, *July 6, 1903.*

FOOD ADULTERATION IN EUROPE.

An article on the adulteration of food products is going the rounds of the German press. It is stated, for instance, that an ordinary liver patty is made into fine "Strassburger" paté de foie gras (a goose-liver patty) by means of borax or salicylic acid and of finely chopped and cleverly distributed pieces of black silk, representing truffles.

Cosmos, a German paper, guarantees the fact that under the label of canned lobsters the soft parts of the cuttlefish and crabs are sold.

In Paris snails are of late very popular, and the adulterators mix them with lungs of cattle and horses. Even entirely artificial snails are manufactured. The shells, recoated with fat and slime, are filled with lung and then sold as "Burgundy" snails.

Lovers of fresh rooster combs are imposed upon by a substitute cut out of hogs' intestines.

Chopped artificial truffles are made of black rubber, silk, or softened leather, and even whole truffles are made out of roasted potatoes, which are given a peculiar flavor by adding ether. They are said to sell well.

Fish spoiled in spite of ice and borax is treated with salts of zinc, aluminum, and other metals. Rubbing the fish with vaseline to give it a fresh look and coloring the gills with fresh blood or eosin—a coal-tar color—is resorted to. The latter is also used to intensify the red color of inferior crabs.

Imparting a greenish color to oysters is another adulteration. An oyster requires about one month in the beds to acquire the greenish color. As this is too long a time, the dealers help them along with an artificial color.

The chemists in the Paris municipal laboratories have shown that tomato jelly is adulterated with turnips, and powdered pepper contains a large admixture of powdered hard-tack.

RICHARD GUENTHER,
Consul-General.

FRANKFORT, GERMANY, *July 7, 1903.*

RUBBER PRODUCTION AND TRADE OF BRAZIL.

The rubber-crop year for the season of 1902–3 closed June 30 under very satisfactory conditions. Estimates and preparations are now being made for the new season just begun. The crop of 1901–2 was the largest ever produced—29,998 tons. The crop of the season just closed was 29,890, a decrease of only 108 tons, or less than 1 per cent. This is especially satisfactory to the trade. Of last season's crop Europe took 15,261 tons and the United States 14,566 tons, an increase in shipments to the United States over the previous year of 510 tons, while the shipments to Europe fell off correspondingly.

The product was shipped as follows:

From—	To Europe.	To United States.
	Pounds.	*Pounds.*
Manaos	16,619,381	18,425,657
Para	13,422,609	13,686,142
Iquitos	3,578,739	....
Serpa	22,583	....
Total	33,643,312	32,111,799

The stock on hand June 30 was 129 tons.

During the past year prices ruled fairly firm at good figures. The exceedingly high prices which prevailed formerly may never be restored, but producers as well as dealers find there is still a very handsome profit for them, once they have accommodated themselves to the new and more healthy conditions.

Never before has so much enthusiasm been shown in the trade, and never before have so many men been employed in the business. Thousands of laborers are pouring into the forests of the interior, and thousands more will follow. New rubber fields will be opened and old ones worked with improved methods and larger forces. As an example of this, I might quote the case of one of the largest rubber producers on the Madeira, who recently informed me that he would take out this year four times as much rubber as ever before.

Business is steadily improving here. One encouraging sign of the times is the fact that several new houses are preparing to embark in the export trade. It seems safe to predict that if there are no further political troubles on the upper river, the crop of this season will be far in advance of any ever before known.

K. K. KENNEDAY,
Consul.

PARA, BRAZIL, *July 7, 1903.*

ADVANCE IN PRICE OF GERMAN RUBBER GOODS.

A circular recently issued by the India Rubber Manufacturers' Association announces an advance of 10 per cent in the price of mechanical goods, which may be roughly described as packing, belting, and hose. This advance is due to the rise in price of raw rubber. Para rubber, which rules the market quotations, has seen some rather prominent fluctuations in recent years, and its purchase has come to be looked upon as a proceeding of a highly speculative nature. In 1900 the price reached $1.01 per pound. Since then it has touched 69 cents. Of late, however, contrary to general opinion, a steady rise has been perceptible, the present price being 95 cents per pound, with every prospect of the figures of three years ago being exceeded in the near future. Under the circumstances, therefore, it was imperative that stringent measures should be taken by manufacturers to insure that they should not, in taking contracts, lose money. It was not merely a consideration of greater or less profit, though this can not, of course, be looked upon as of subsidiary interest; it has obviated the alternative of a reduction in quality. Such reductions have been resorted to in the past much more freely than was to the ultimate advantage of either buyer or seller.

Oliver J. D. Hu[illegible]es,
Coburg, Germany, *July 14, 1903.* *Consul-General.*

RUBBER-GOODS INDUSTRY OF GERMANY.

IMPORTS AND EXPORTS.

While in 1902 the rubber industry in Germany only held its own, no new plants having been constructed, it seems probable that the general tendency of steady expansion which has marked this industry for over a decade will be gradually resumed. The importations of rubber and gutta-percha rose steadily from 25,800,000 marks ($6,140,400) in 1892 to 73,800,000 marks ($17,564,400) in 1900, but dropped to 48,200,000 marks ($11,471,600) in 1901—a decline caused by the serious business depression prevailing in Germany during that year. In 1902 the import of raw rubber and gutta-percha increased to 60,935,000 marks ($14,502,530), and the three months of January, February, and March show an increase in the amount of rubber and gutta-percha imported and in the amount of rubber goods exported.

Although the business depression has been seriously felt by the rubber industry, it has not suffered from the serious failures that have affected other lines of manufacture. Decreased consumption in the home market and a tendency to unduly lower prices were the most serious difficulties contended with in the year 1902. In the first nine months of that year there was a decided increase of the amount of rubber consumed as compared with the corresponding period of 1901, and an increased export of rubber goods amounting to 3,500,000 marks ($833,000).

THE NEW TARIFF.

The most important factor that is likely to materially affect the manufacture of rubber goods in this country in the near future is the new tariff, which increases the duties on various classes of rubber goods and will affect to an important degree competition from foreign countries. The most radical advances in duties relate to woven goods containing rubber and textiles, the duty being raised from 90 marks to 100 marks ($21.42 to $23.80) per 100 kilograms (220.46 pounds), except when silk is used with rubber, in which case it was raised to 180 marks ($42.84), and on rubber shoes, the duty on which is raised from 40 marks to 70 marks ($9.52 to $16.66) per 100 kilograms for unlacquered shoes and from 60 marks to 100 marks ($14.28 to $23.80) on lacquered shoes.

The new German tariff will not go into effect before new commercial treaties are negotiated with foreign powers, and if these treaties fail to secure satisfactory conditions for the export of German rubber goods the product manufactured for export will be sold in Germany and will, it is feared, seriously congest the whole market, as in certain lines of goods—especially in belting—the inland trade is not large enough to give sufficient work to all factories.

WAGES IN GERMANY AND IN THE UNITED STATES.

In all lines of manufacture requiring hand labor Germany has the advantage of cheap wages, and it is only in machine-made articles tnat the United States can hope to compete successfully. It is estimated that the wages paid in Germany at present to workers in the manufacture of rubber goods vary from 40 cents to $1 for women and from 75 cents to $1 for men, the average wage for women being about 47 cents and for men 92 cents per day. Low as are the wages of the German laborers, the wage paid Russian laborers is only about one-half thereof, and the increased competition, especially in rubber shoes from Russia, was one of the factors in the increase of duties on rubber goods in the new tariff. With cheap skilled labor, adequate capital, and thoroughly scientific methods, it is likely that Germany will remain a keen competitor in the world's markets.

GERMANY'S CHEMICAL TALENT.

England and America have been the pioneers in inventing new processes in the manufacture of rubber goods and the development of this industry on a large scale, but the importance of Germany as a manufacturer of rubber goods is steadily increasing and she is at present one of the foremost producers in this line. One of the factors that have contributed notably to the success of this industry in Germany has been the high grade of chemical talent which has been employed. While it is not possible to reproduce an article exactly from the results of chemical analysis, the results of German investigations show that important savings in the expense of testing and experimenting on a product which it is desired to imitate can be achieved by having this work done by men of large scientific knowledge who are thorough chemists. It is especially through the ability of these men that a development in the industry is to be looked for in this country.

DEAN B. MASON,
Vice and Deputy Consul-General.

BERLIN, GERMANY, *July 11, 1903.*

SUGAR INDUSTRY OF AUSTRIA-HUNGARY.

EFFECTS OF OVERPRODUCTION.

In the year 1901 there was an excessively large crop of beets and an unusually large amount of unsold sugar on hand, prior to which time an overproduction of sugar seems to have taken place throughout the world, resulting in the unprecedented decline in price to 18 crowns per 100 kilograms ($3.62 per 220 pounds) f. o. b. Aussig, which is the principal shipping point of Bohemia by water transportation. The price further receded until it reached the quotation of 16.40 crowns per 100 kilograms ($3.33 per 220 pounds). Sugar factories, therefore, showed correspondingly bad results generally, and only those favored with exceptional yields or reduced working expenses escaped very heavy losses. The low prices of 1902 had, however, the beneficial effect of reducing the area of beet planting about 10 per cent.

DISCRIMINATION IN FAVOR OF FOREIGN BUYERS.

England is the largest buyer of Austrian sugar, and in consequence of the Austrian Government export bounty of 4.60 crowns per 100 kilograms (93 cents per 220 pounds) to refiners and exporters and the Government tax, together with the local consumers' tax, amounting to 38 crowns per 100 kilograms ($7.71 per 220 pounds), Austrian sugar is sold in England at less than half the price it is sold to consumers in this country, where it is grown and manufactured, as shown as follows, per cwt. (112 pounds): Present price f. o. b. Hamburg, 9s. 6d. ($2.31); freight and insurance to England, 6d. (12 cents); English import duty, 4s. 2d. ($1.01); total cost of 112 pounds delivered in England, 14s. 2d. ($3.45). At the exchange rate of 24 crowns ($4.87) per pound sterling this is equal to 33.50 crowns ($6.74) per 100 kilograms (220 pounds), while the present selling price of refined sugar in Austria, fixed by the cartel, is 84 crowns ($17.05) per 100 kilograms (220 pounds), leaving the discrimination in favor of England against the home market 50.50 crowns ($11.61).

AREA UNDER CULTIVATION.

The total area of sugar beets under cultivation in Austria-Hungary was stated in May as follows:

District.	1901.		1902.	
	Hectares.	*Acres.*	*Hectares.*	*Acres.*
Bohemia	150,900	372,723	113,030	279,184
Other parts of Austria	105,200	259,844	91,200	225,264
Hungary and Bosnia	106,600	263,302	99,700	246,259
Total	362,700	895,869	303,930	750,707

The reduction of the area under cultivation would not have sufficed to bring about the change for the better, but fortunately this year's beet crop in both Bohemia and Germany fell far below the average, being in many places 40 per cent below the preceding year.

CONSUMPTION AND PRODUCTION.

As the home consumption amounts to about one-third of the total beet production, the raw-sugar factories receive from the refiners 3.50 crowns per 100 kilograms (71 cents per 220 pounds) trust profit, which is of vital importance to them. The statistical figures for Austria-Hungary have been computed as follows:

Description.	1901-2.	1902-3 (estimated).
	Tons.	*Tons.*
Stock on August 1	168,400	251,400
Production	1,288,000	1,050,000
Total	1,456,400	1,301,400
Consumption	387,500	387,500
Export	817,500	800,000
Total	1,205,000	1,187,500
Stock on August 1	251,400	113,900

ETHELBERT WATTS,
Consul.

PRAGUE, AUSTRIA, *July 22, 1903.*

GOVERNMENT AID TO WEST INDIAN SUGAR PRODUCERS.

Consul W. R. Estes sends from Antigua, June 15, 1903, a clipping from the Antigua Standard of June 6 in regard to a disposition on the part of the Imperial Government to render financial assistance to West Indian sugar producers.

The island, adds the consul, depends almost entirely upon sugar; it is in fact the only export product. The machinery in use is old and dilapidated. While 100 tons of cane should produce 13 tons of sugar, the present apparatus only succeeds in getting out 6 tons; and the new move on the part of the owners of the Bendals estate is the initial step toward improvement of the machinery and consequent cheapening the production of sugar.

The clipping reads:

SUGAR FACTORIES,
Belvidere Estate, May 30, 1903.

Editor Antigua Standard.

DEAR SIR: It is the wish of his excellency the governor that the conditions under which the proprietor of Belvidere estate will receive assistance from the Imperial Government for the reconstruction of his sugar factory should be made public; and I have therefore pleasure in forwarding for publication in your paper, if you so wish, a memorandum of these conditions. The matter is one of great public interest, more especially to the industrious peasant grower, who should now have a means open to him of considerably bettering his condition.

I am able to state on authority that the conditions inclosed will also apply to the large central factory scheme, except, of course, that the amount of imperial assistance will be £15,000 ($72,997), and that the amount of peasants' cane to be purchased, if tendered, will be proportionately larger.

Yours faithfully, ARCHD. SPOONER.

Memorandum of conditions accepted by the proprietor of Belvidere estate in consideration of imperial assistance being afforded toward the remodeling of the present sugar factory.

1. In order to guarantee the due performance of the public object contemplated, the owner of Bendals and the estates associated with it will be required to give a first mortgage of £3,500 ($17,032) over Bendals and the estates associated with it.

2. The Government will not demand interest on the £3,500 so long as not less than 1,500 tons a year of bona fide peasants' canes are, if tendered at the factory, paid for at not less than 7s. 6d. per ton under any circumstances and rising from that minimum on a sliding scale calculated on the basis of 4½ per cent of the value of 96° gray crystals, f. o. b. Antigua.

3. The Government will claim interest at 8 per cent—viz, £1 a year for every 10 tons of cane below 1,500 tons with respect to peasants' cane tendered at the factory and not paid for at 7s. 6d. per ton.

4. The owner will cease to be liable to repay the loan of £3,500 and will be free from all obligations with regard thereof after 22,500 tons of peasants' cane have been paid for at 7s. 6d. ($1.825) a ton, or at the expiration of twenty years.

5. The Government shall have power to appoint a board to determine the order and amount of peasants' cane to be ground daily throughout the reaping season.

6. The owner will, when required by the Government, let any uncultivated land suitable for sugar growing to peasants, who will grow cane for the factory at a rent not exceeding £1 ($4.86) per annum per acre.

7. The Government advance of £3,500 ($17,032), and such sum not being less than £3,500 in cash, or securities to bearer as the owner is prepared to invest in the factory, shall be paid over within a fortnight to a joint account in the name of the Crown agents for the colonies and the owner. Payments shall be made from this account against certificates of work or machinery duly delivered and shipped, and such funds as are not immediately required shall be placed on deposit with a bank approved by both parties and deposit interest shall be credited to the joint account.

8. The owner shall select the type of machinery and the maker. The Crown agents shall ascertain through their consulting engineer that the prices quoted are fair and reasonable. The Crown agents will effect insurances on the machinery in transit.

9. The factory shall be provided with triple-effect machinery and appliances for making refiners' gray crystals and shall be at least capable of making 900 tons of refiners' crystals in one hundred days of fourteen hours each, or 1,400 tons in one hundred days of twenty-one hours each.

10. The books of the factory shall be accessible to the Government for inspection and audit so long as the mortgage of £3,500 ($17,032) is outstanding.

11. Subject to revision by the Secretary of State, the governor shall have power to impose fines not exceeding in the aggregate £1,000 ($4,866) in place of liquidated damages for any breach of the agreements finally sanctioned by the Imperial Government.

12. If a question arises as to the construction of the final agreement, it shall be settled by the governor, from whose decision there shall be an appeal to arbitration on the deposit of £300 ($1,460) in the local treasury for the expenses thereof. The board of arbitration shall sit in Antigua; the governor and owner shall each appoint an arbitrator and an umpire shall be named by the Secretary of State.

SUGAR AND FRUIT PRESERVING IN GERMANY.

I transmit herewith a report, translated from a communication of the Chamber of Commerce at Halberstadt, on the new preserving factory at Tangermuende, in this consular district.

As various aspects of the sugar question in general are discussed in this report, I thought it might not be amiss to call the attention of our sugar producers and refiners and fruit preservers to this new enterprise.

William A. McKellip,
Consul.

Magdeburg, Germany, *July 14, 1903.*

NEW PRESERVING FACTORY IN TANGERMUENDE.

Sugar outlook.—The firm of Fr. Meyers Sohn, in Tangermuende, has erected a preserving factory opposite their sugar refinery. The principal reason which led the firm to engage in this enterprise is the abolition of the export bounty by the Brussels convention, on account of which the German export of sugar is likely to fall off considerably. This retrogression, writes the firm, will be to a great extent hastened by the fact that the Americans in Cuba and also in the United States have interested themselves in the development of the sugar industry with their accustomed energy; by the fact that Russia, with its bounties on sugar, will in time supply many of the countries outside of the Brussels convention; and by the further fact that many countries which up to the present time have imported their sugar are building up or have built up, under high protective tariffs, a sugar industry of their own.

By this decrease of the sugar exportation the makers of ordinary sugar, the products of the refineries, and the so-called white-sugar factories will be principally affected. England, too, which up to the present time has been a good market, has adopted the protective policy in reference to the importation of sugar. Thus the first step has been taken for the protection of the English refining industry. The efforts of the English Government toward closer intercourse with its colonies, particularly in industrial relations, the discriminations recently introduced between the non-English sugars in the South African colonies of England as opposed to the products of the English refineries, show clearly the purposes of England, and it would not be difficult for the English to build up the refining industry to such an extent that they may in time supply the inland demand with English products. England will still be unable to do without the German raw sugar for a considerable time; it is, in fact, not improbable that the exportation of raw sugar to England will increase in the coming years with the progress of the English refining industry in the same measure as the export of refined sugar decreases. The German refining industry must, therefore, strive to develop the consumption of sugar in Germany by every means in its power.

Sugar consumption in preserves.—In England an extraordinary quantity of sugar is consumed in the form of jams, marmalades, etc.; it was therefore in the interest of the firm, which has close business connections with England, to make the attempt to secure a similar market in Germany. The new enterprise is based upon the principle of supplying only the best goods, in order that their conserved fruits may compete with the best put up in England and France. In addition to the creation of a large demand for their goods in Germany, the firm will also give full attention to the export business.

The preserve factory at Tangermuende.—The building of the fruit-preserving factory was begun in September of the past year, and in March of the present year it was set in operation for trial. While the factory was being built, orchards of 75 morgens (47.25 acres) in extent were started, in which various kinds of plums are grown. Planted under these are currants, raspberries, and strawberries. Most of the fruit is, however, brought from a distance. The factory buildings are connected with the railroad and cover a space of 2,500 square meters (26,900 square feet). For producing steam for cooking and heating, boilers with a heating surface of 50 square meters (539 square feet) are used. Power and light are supplied by the power house of the sugar refinery belonging to the firm. About two-thirds of the space built upon has cellars. The present equipment is sufficient to produce enough fruit daily to fill a freight car. The production can easily be increased threefold in the buildings already erected. These are so arranged that, without destroying the unity of the plan, they can be increased two and one-half times.

In the so-called "hall for preparation" is a large number of hand machines for paring and coring the fruit, as well as two large presses for extracting the juice from the same. The greatest space is occupied by the kitchen, in which the steaming of the fruit in large boilers furnished with jackets takes place. Adjoining this kitchen is a room in which the confections and candied fruits are prepared. In a room farther on the conserves are stored. The fine equipment of the dining, toilet, and bath rooms deserves mention.

GERMAN MERCHANT MARINE.

Statistics covering the German merchant marine up to January 1, 1902, show a total of 3,958 vessels of 3,080,548 tons gross register and 2,093,033 tons net register, an increase of 76 vessels, or 254,148 tons gross and 151,388 tons net register, as compared with the preceding year. The classes of shipping are 2,236 sailing vessels, 260 sea lighters, and 1,463 steam vessels. The steam vessels (46 paddle and 1,417 screw) show a register of 2,446,244 tons gross and 1,506,059 tons net.

During the year 1901, 179,129 vessels of 38,302,173 net registered tons entered German ports, an increase of 4,052 vessels as compared with 1900. Of this total, 136,965 vessels (76 per cent), with 60 per cent of the total tonnage, were German bottoms.

In this connection it may be interesting to give a few figures as to capitalization and number of vessels operated by the leading German companies at the close of 1902:

Company.	Capital stock.		Bonded indebtedness.		Vessels.	Value of vessels.	
	Marks.	*Dollars.*	*Marks.*	*Dollars.*		*Marks.*	*Dollars.*
North German Lloyd	100,000,000	23,800,000	58,250,000	13,863,500	107	141,800,000	33,748,400
Hamburg-American Line	100,000,000	23,800,000	39,100,000	9,305,800	119	143,500,000	34,153,000
Bremen Steamship Co. (the Hansa)	15,000,000	3,570,000	4,500,000	1,071,000	41	22,300,000	5,307,400
German Australia Steamship Co	12,000,000	2,856,000	2,000,000	476,000	23	18,500,000	4,403,000
Hamburg-South American Steamship Co	11,000,000	2,618,000	5,000,000	1,190,000	32	22,900,000	5,450,200
German Steamship Co. (Kosmos)	11,000,000	2,618,000	....	....	28	14,000,000	3,332,000
German East Africa Line	10,000,000	2,380,000	5,000,000	1,190,000	18	15,000,000	3,570,000
Argo Steamship Co	7,000,000	1,666,000	....	....	27	8,600,000	2,046,800
German Levant Line	6,000,000	1,428,000	3,000,000	714,000	26	9,700,000	2,308,600

The International Mercantile Marine Company, through the consolidation of six different steamship lines, has the largest company tonnage in the world, viz, 1,035,000 registered tons, the Hamburg-American Line coming second with 651,000 registered tons, followed by the North German Lloyd with 583,000 registered tons and the British India Steam Navigation Company with 449,000 registered tons.

In the matter of speed, the German vessels—the *Deutschland*, of the Hamburg-American Line, and the *Kronprinz Wilhelm*, of the North German Lloyd—hold the world's record, with an average speed of more than 23 knots per hour.

JOHN E. KEHL,
Consul.

STETTIN, GERMANY, *July 10, 1903.*

BRITISH VS. GERMAN SHIPPING IN THE ORIENT.

The marked increase in the number and tonnage of German ships trading here and at other British oriental ports will perhaps justify this report and its inclosure, although the clipping refers to conditions outside my official jurisdiction.

The rapid advance of German business in Japan, Siam, the Philippines, the Straits Settlements, and Ceylon have before prompted remark. British shipping and business interests enter complaints, and these are especially loud as to German entry and cut competitions in ports made free to commerce, like those of British colonies in this part of the world.

The inclosure refers to one port, but a similar showing might be made as to all, or nearly all, the ports of the Orient.

O. F. WILLIAMS,
Consul-General.

SINGAPORE, STRAITS SETTLEMENTS, *June 16, 1903.*

GERMAN VS. BRITISH SHIPPING IN COLOMBO.

[From the Straits Times of June 13, 1903.]

A study of the shipping statistics of Ceylon for the past two decades furnishes much interesting matter for thought, says the Times of Ceylon. There has been progress in every direction, and the shipping of all nations has from year to year made greater use of the island ports. The most remarkable feature, however, of the shipping statistics, viewed comparatively, is, of course, the extraordinary progress recorded by Germany. It is far ahead of that of any other country, and is a wonderful testimony to the enterprise and energy which have been characteristic of German commercial men since the war of the early seventies. For the purposes of comparison we propose briefly quoting figures from the shipping returns of 1879, 1884, 1891, and the present year. These commence with the shipping before Germany had made her appearance at all as a competitor to Great Britain, France, and the other great nations in the eastern shipping trade, so far as Ceylon was concerned, at any rate. Not a single craft of any kind is entered in the shipping returns of 1879 as coming from Germany. The following will show how the Ceylon shipping of twenty-three years ago was divided; and the reason we take 1879 is because the article was suggested by a merchant who is interested in that year as the date of his arrival in the colony:

Ceylon shipping in 1879.

Nationality of vessels entered and cleared.	Number.	Tonnage.
		Tons.
British	1,240	1,351,135
Colonia	5,854	844,323
French	179	309,396
Other foreign	90	104,879
Total	7,363	2,609,733

In 1884 we have our attention attracted to Germany, which joins France, Austria, Holland, and Italy as European countries doing any direct trading with Ceylon worth noticing, though the Nord-Deutscher Lloyd agency was not established in Colombo until 1885.

Ceylon shipping in 1884.

Nationality.	Number.	Tonnage.
Vessels entered and cleared:		*Tons.*
British	1,439	2,526,564
Colonial	4,809	421,901
French	157	299,905
German	17	24,906
Other foreign	161	....
Total	6,583	....

The progress made by Germany in the next seven years is so great that she completely outdistances France and takes place next to Great Britain and our colonies:

Ceylon shipping in 1891.

Nationality.	Number.	Tonnage.
Vessels entered and cleared:		*Tons.*
British	2,458	4,448,695
Colonial	4,019	421,816
German	156	378,384
French	133	240,015
Other foreign	145	....
Total	6,911	....

Not only has Germany passed France, but she is approaching by leaps and bounds in point of tonnage upon the colonial position. In the eleven years since 1891 Germany has easily passed by the colonies in the matter of tonnage and stands a magnificent and unapproached second to the United Kingdom. The figures are worth studying attentively:

Ceylon shipping in 1902.

Nationality.	Number.	Tonnage.
Vessels entered and cleared:		*Tons.*
British	3,244	6,739,107
Colonial	2,673	225,475
German	330	1,295,382
French	246	595,384
Other foreign	354	....
Total	6,847	....

The significance of the above figures is all the greater when it is remembered that it also shows an enormous increase in shipments of merchandise between Ceylon and the Continent, and particularly to German ports. British steamers only touch regularly at Naples, Marseilles, and Antwerp, and it may be taken as a

general rule that the whole of the other continental trade with Ceylon is done with German steamers. The extent to which this trade is increasing is regularly shown in the customs returns. In the statistics given above we have used both the entered and cleared figures, adding them together for purposes of convenience. We have also included the Maldives under British colonies.

NEW MEXICAN STEAMSHIP LINES.

The Mexican Government has granted a concession to Messrs. Antonio Basagoiti, Cesar Castro, and Luis Barroso Arias for the establishment of two steamship lines, one between Mexican Gulf ports and ports on the Caribbean Sea, and the other between Mexican Gulf ports and Central and South American ports.

Steamers are to sail from Veracruz, touching at Coatzacoalcos, Progreso, Santiago de Cuba, Honduras, Nicaragua, Costa Rica, Colombia, and Venezuela, and also from Veracruz, touching at Coatzacoalcos, Puerto Morelos, Bahia de la Ascencion and Xcalac, with the privilege of extending the service to Belize and ports in Guatemala and Honduras. One round trip is to be made by both lines of steamers monthly, stopping at all ports inward and outward bound. The steamers are not to be of less than 2,000 tons burden, having accommodations for first and second class passengers and a minimum speed of 10 knots. These steamers must be the property of the concessionnaires, who are, however, authorized to charter vessels during the term of this concession, provided they are not chartered for a less time than six months. The concession is for a term of ten years. The Government reserves the right to employ these vessels as cruisers in case of war. All vessels of these lines are to sail under the Mexican flag, and chartered vessels in this trade, though under foreign flags, are to be considered as Mexican also.

As these new lines are intended for the purpose of opening up trade with the recently acquired territory of Quintana Roo, as well as with Central and South America, the Government has granted them special privileges and subsidies. They are to receive $2,000 Mexican currency ($766) for every round trip between Veracruz and Xcalac, and $8,500 Mexican currency ($3,256) for every round trip between Veracruz and Venezuela. The company's vessels have preference over any other merchant vessels on the Gulf whenever repairs have to be made at any of the Government arsenals.

This concession is to be forfeited if both lines are not established within one year from the date thereof; for suspension of traffic for a longer period than three months without the concurrence of the Government; for transferring this concession to a foreign government, or if such be admitted as a partner to the enterprise; for transferring this concession to any company or individual without previous consent having been obtained from the Government.

For noncompliance with the terms of this concession, $10,000 ($3,800) in bonds of the consolidated debt, deposited with the treasurer, shall be forfeited to the Government.

W. W. CANADA,
Consul.

VERACRUZ, MEXICO, *July 9, 1903.*

STEAM COMMUNICATION WITH SOUTHEAST AFRICA.

On my first voyage hither I traveled by a steamship of the Castle Line,* which had a contract with the Portuguese Government for the conveyance of the Portuguese mails, officials, soldiers, etc., between Lisbon and the Province of Mozambique. At that time the vessels of this line only came as far north on this coast as Durban, at which port the Portuguese mails, passengers, etc., were transshipped to small coasting steamers.

A few years later the Castle Line discontinued its Mozambique service and the "Mala Real" (Royal Mail), a Portuguese steamship line, secured the contract for the Lisbon-Mozambique service. This line sent out some very fine steamers, but the service did not last long.

The Mala Real was succeeded by the Union Line (British), which in turn was succeeded by the Deutsche-Ost-Afrika Linie (German). The contract of this last-named line having recently expired, the service has once more been taken over by a Portuguese steamship company.

This new steamship line is called the Empreza Nacional de Navigacao (the National Shipping Company). The fleet of this company on this coast is made up of the following first-class steamers: *Malange*, of 2,410 tons; *Portugal*, of 2,496 tons; *Zaire*, of 2,008 tons; *Loanda*, of 2,175 tons; and the *Zambezia*, a coasting steamer, now building.

The freight rates per ton from Lisbon to Lourenço Marquez by this line are as follows: First class, $9; second class, $12; third class, $16.50.

The first-class passenger fare from Lisbon to Lourenço Marquez is, at the present rate of exchange, $207.

The schedule time for the voyage from Lisbon to Lourenço Marquez, calling at San Thomé, in the Gulf of Guinea, and at St. Paul de Loanda, in Portuguese West Africa, on the way, is four weeks; but the steamers that have already arrived here have made their respective voyages in less than the schedule time.

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* This company is under governmental subvention—*i. e.*, is subsidized by the Portuguese Government—and is expected to carry the mail and call at ports of Portuguese possessions in South and West Africa.

From this port these steamers go on up the coast, calling at Beira and at Mozambique. At Mozambique the outward voyage ends and the homeward voyage begins.

The first-class passenger accommodations on these vessels are excellent—very well appointed and scrupulously clean.

This steamship line does business in conjunction with another Portuguese line that maintains a freight and passenger service between New York and Lisbon, calling at New Bedford and at the Azores en route. I have been told by the local agent of this line that a through tariff of passenger and freight rates between New York and New Bedford and this coast, via Lisbon, is soon to be promulgated. This combined through service will offer an alternative route to New York and New England shippers of goods to this coast and one that can be depended upon, as these vessels are positively obliged to keep the schedule time. It will also offer a very attractive route to passengers from the United States, especially to those who sail during the months of the winter and the early spring, as these vessels, on the New York-Portugal route, take the southern passage and manage to keep clear of the bad weather that is encountered on the more northerly routes. Passengers traveling from New York by this route also avoid the discomforts of the passage across the Bay of Biscay.

The voyage from Lisbon via the west coast and out around the Cape of Good Hope is always a pleasant one; the thermometer is never uncomfortably high for more than twenty-four hours at a stretch, even in the equatorial regions. On the other hand, the voyage via the Red Sea and the Mozambique Channel, although interesting, is a very uncomfortable one on account of the intense heat that is encountered, which lasts from two to three weeks with hardly any interruption.

Passengers bound for the Transvaal and traveling by these steamship lines can disembark at this port (Lourenço Marquez) during the day of arrival, at their leisure, and take the train the next morning for Johannesburg, arriving at their destinations the morning after, thereby avoiding the longer and more tedious railroad journeys from the southern ports.

COASTING STEAMERS.

For some years Messrs. Abreu & Couto, a local Portuguese firm, have been running a steamer of several hundred tons in the coastwise trade. Some other people are also interested in this venture, which is officially known as the Empreza de Limpopo, but Messrs. Abreu & Couto are the people who are at the head of the business. Their coastwise business has grown so that they have lately been obliged to get another steamer, and a much larger vessel than their present steamer is now being built for them in England and will probably be delivered to them in a few months.

W. Stanley Hollis,
Consul.

Lourenço Marquez, Portuguese East Africa,
June 22, 1903.

GERMAN OCEAN STEAMERS.

The number of the ships of the German merchant marine of a tonnage of 1,000 tons and more amounted to 946 last year, and has only increased 30 this year, viz, increase in steamers, 41; decrease in sailing vessels, 11.

The number of the crews of the whole fleet has, however, increased considerably, being now 56,300 against 50,500 last year. The total tonnage shows a gain of nearly 250,000 tons, as it is the tendency of the times to build ships with the largest practical tonnage.

The names and tonnage of the largest German steamships are: *Kaiser Wilhelm II*, Lloyd Line, 20,000 tons; *Deutschland*, Hamburg-American Line, 16,502 tons; *Kronprinz Wilhelm* and *Kaiser Wilhelm Der Grosse*, both of the North German Lloyd Line, 14,908 and 14,349 tons, respectively; *Patria*, *Pennsylvania*, *Pretoria*, *Graf Waldersee*, passenger and freight, of the Hamburg-American Line, over 13,000 tons each; *Grosser Kurfuerst*, North German Lloyd Line, 13,182 tons; *Kaiser Friederich*, Elbing Company, 12,480 tons; *Moltke* and *Bluecher*, Hamburg-American Line, 12,333 tons each.

The steamers between 8,000 and 12,000 tons—18 in number (against 17 last year)—are owned by the North German Lloyd and the Hamburg-American Line, among them *Auguste Victoria*, *Fuerst Bismark*, *Kiautschou*, and *Hamburg* of the Hamburg-American Line, and *Kaiserin Maria Theresia* and the steamers of the *Barbarossa* and *Rhein* class of the North German Lloyd Line.

The Hamburg-American Line and the North German Lloyd Line own 25 steamers (23 in 1902) of from 6,000 to 8,000 tons.

The Hansa Company, of Bremen, owns the steamer *Drachenfels*, of 7,217 tons; the East Africa Line, of Hamburg, the two new mail steamers *Prinzregent* and *Feldmarschall*, each of about 6,300 tons; and the Hamburg branch of the German-American Petroleum Association owns the *Phœbus*, of more than 6,000 tons. Seventy-five steamers (against 70 in 1902), owned by various companies, have between 5,000 and 6,000 tons; 72 (61 in 1902) are from 4,000 to 5,000 tons; 80 (same as 1902) are from 3,000 to 4,000 tons; and 465 (444 in 1902) are between 1,000 and 3,000 tons.

RICHARD GUENTHER,
FRANKFORT, GERMANY, *July 31, 1903.* *Consul-General.*

POSTAL, TELEGRAPH, AND TELEPHONE STATISTICS.

Postal and telegraphic statistics for 1900 have just been printed in the Statistical Yearbook for the German Empire.

POST-OFFICES.

Germany had in that year 44,775 post-offices, following next to the United States, which had 77,957. Great Britain had 22,194; France (including Algeria), about 11,000; Italy, nearly 8,000; Austria-Hungary and Russia, about 6,000 each.

In the number of persons employed in European postal departments, Germany stands first with 222,809; Great Britain, 173,184; France, 77,245; Italy 74,958; Russia, 56,217; and Austria-Hungary, 67,584.

Letters and postal cards forwarded by the public mails in 1900 were taken, in round numbers, as follows:

United States	7,250,000,000
Great Britain and Germany each about	3,500,000,000
France	2,250,000,000
Austria-Hungary	1,000,000,000
Italy	755,000,000
Japan	730,000,000
Russia	566,000,000

Nearly one-third of the total for Germany consisted of postal cards, while only one-twelfth of the total figures for the United States were postal cards. This difference is attributed to the saving spirit of the Germans.

TELEGRAPHS.

In 1900 Germany had 24,471 telegraph offices, with 36,000 instruments in operation; Great Britain, 11,512 offices and 38,000 instruments; and the United States, 22,954 offices and 81,000 instruments.

The number of telegraphic dispatches transmitted in 1900 was:

Great Britain	92,000,000
United States	63,000,000
France	50,000,000
Germany	46,000,000

TELEPHONES.

In Germany there were 2,411 cities or towns having public municipal telephone systems, with 305,795 connections. France had 1,199 public telephone plants with 72,480 connections.

SIMON W. HANAUER,
Deputy Consul-General.

FRANKFORT, GERMANY, *July 23, 1903.*

FRENCH CHAMBERS OF COMMERCE.*

A chamber of commerce in France may only be established by act of the Government. They are only created after a thorough investigation as to the utility of such an institution in the district where it is demanded. There are 137 chambers of commerce in France, including those in Algiers and Tunis, and 28 in the French colonies. There are also 27 French chambers of commerce in foreign countries.

The duties of a French chamber of commerce are to furnish the Government with such advice and information as may be required concerning commercial and industrial facts and interests. The chambers must make a thorough study of all the conditions surrounding public works, harbors, river navigation, post-offices, railroads, etc., in their respective districts, and be able to furnish the Government with reliable information at any time. Especially has this been the case in aiding the Government to prepare tariff legislation and commercial treaties. The chambers are often called upon by the Government to provide part of the funds necessary for the execution of such public works as harbor improvements, the equipment of working plants of ports, construction of telephone and telegraph lines, etc. In such cases, the chambers are authorized by special acts of Parliament to contract loans for this purpose. The cost of the improvements now under construction in the port of Havre, for example, is estimated at $5,790,000, of which the Government provides $3,332,750 and the Chamber of Commerce in that city $2,457,250. French chambers of commerce also take a lively interest in the founding of commercial and industrial schools.

French chambers of commerce in foreign countries are to a certain extent independent organizations. Their object is to protect French interests in furnishing to the Government and the chambers of commerce in France such reports and information as may tend to promote the commerce and industry of France. They are also called upon to furnish statistics, to organize museums of samples, to serve as tribunals of arbitration and conciliation concerning commercial disagreements between resident Frenchmen, and to keep in touch with the French consular representatives. The yearly subvention budget of the French Government to-day includes $19,300 for the purpose of helping these chambers of commerce in every part of the world. These institutions are placed on an equality with the home chambers, with which they maintain regular correspondence. When requested, they appoint reliable agents in foreign countries and give information concerning the standing and credit of business houses.

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* For other reports of this series see ADVANCE SHEETS Nos. 1136 and 1659. I am indebted for the facts in this report to Bulletin No. 21, issued by the American Chamber of Commerce in Paris for the month of April, 1903.

The chambers of commerce in France, and as a rule those in the colonies, receive no subventions from the Government directly; but by virtue of the laws existing they receive a portion of the special tax paid by merchants and others engaged in business. Every year chambers of commerce present the budget of their receipts and expenditures, and the Minister of Finance increases or decreases, as the cases may be, the special tax on merchants in order to meet the requirements of the budgets.

The bulletin issued by the American Chamber of Commerce in Paris says:

> Chambers of commerce in France report to and correspond directly with the Minister of Commerce. Those of Algeria report directly to the Minister of Commerce, sending, however, copies of their communications to the prefect of the Department and to the governor-general; those of Tunis communicate with the French resident.
>
> Those of the colonies correspond directly with the Minister of Colonies, informing, however, the local administration of the communications they send to the Government.
>
> Chambers of commerce in France, in the colonies, and in foreign countries, as far as can be ascertained by their published reports, accomplish very good work in promoting the industry and trade of the country, and, judging from the requests for reports and information which are made by the Government, their services must be considered of value.
>
> Besides the chambers of commerce already mentioned, there exists the National Office of Foreign Commerce, which was created by convention between the Minister of Commerce and the Chamber of Commerce of Paris and by virtue of the law of March 4, 1898.
>
> The objects of this office are to furnish French manufacturers and merchants commercial information of a nature tending to increase the outlets for French trade in foreign countries and in the French colonies and protectorates. The Minister of Commerce and the president of the Chamber of Commerce in Paris are, respectively, president and vice-president of this organization. The managing director is appointed by the Minister of Commerce. This office is well equipped, well managed, and does efficient work in the way of giving information. The Moniteur Officiel du Commerce is edited and published by this office and always contains valuable information.
>
> In all the Departments of the French Government there are certain special

councils or commissions, in some of which chambers of commerce are represented by their delegates. For example:

By virtue of the laws of October 13, 1882, and December 1, 1894, there was created in the Ministry of Commerce a superior council of commerce and industry, which is under the supervision of the Minister of Commerce and is composed of 60 members, two of whom are vice-presidents. The council is divided into two sections: (1) Section of commerce; (2) section of industry. Each of the sections consists of 30 members, 15 of whom are chosen among the presidents of the chambers of commerce.

The systematic work of the French chambers of commerce is of great value, while the 27 chambers established in as many emporiums of trade in different parts of the world may well serve as models for other countries contemplating the organization of similar institutions. The chambers of commerce in the colonies have been of valuable service in giving information to the Government and colonists about the climate, cost of labor, the capital necessary to exploit concessions of various kinds, natural resources, native products, cost of inland freight, etc. They have also done much to assist the mother country in introducing public works, and have taken the initiative in starting all sorts of enterprises, such as railroads, plantations, and mines.

ERNEST L. HARRIS,
EIBENSTOCK, GERMANY, *July 22, 1903.* *Commercial Agent.*

MUNICIPAL MANAGEMENT OF PUBLIC WORKS IN GERMAN CITIES.

In Germany there is a very strong tendency on the part of the State or municipal authorities, as the case may be, to secure control of all the works which contribute in any way toward the public welfare. It is usually the custom on the part of local authorities to grant a concession for a certain number of years, providing that when the time expires the city shall assume control of the enterprise. In the majority of cases it has either been private enterprise or a stock company which has taken the initiative in German cities in introducing the most advanced technical and scientific improvements. This has been the case in small towns as well as in large cities. The water and gas works of Eibenstock, for example, were built a few years ago by a stock company organized by the citizens of the town. The ownership of both, however, was recently acquired by the municipal government and the company liquidated. Government control of all such enterprises has led to a great rivalry among the large cities of the Empire in striving to be first in the application of the newest methods and latest inventions known to science. The exhibits of the different cities of the Empire at Dresden afford a striking opportunity to study the progress made in industrial science and its application in Germany to-day.

The exhibition is divided into two parts. In the first section are the exhibits of the large German cities with regard to the progress made in recent years relating to municipal management of water-works, sewerage canals, underground wires, telephones, electric railways, gas and electric-light works, etc.

One of the most interesting features of the exhibition is the cross-section street of the city of Dresden.

In the second section of the exhibition many of the large industrial concerns of the Empire are represented.

ERNEST L. HARRIS,
EIBENSTOCK, GERMANY, *July 20, 1903.* *Commercial Agent.*

FRENCH BUILDING-TRADES EXHIBITION.

An exhibition of arts connected with the building trades will open at the Grand Palais, Champs Élysées, on July 30. The exhibits will be divided into six groups and each of these groups is subdivided into classes. The groups are as follows:

I.—Cheap habitations and social economy.
II.—Architecture.
III.—Hygiene and health.
IV.—Building industries.
V.—Civil engineering, public works, and transport.
VI.—House decorations (fixed or movable), furniture, and industries connected therewith.

The chief subjects comprised in the various classes are: Architecture as applied to houses, factories, farms, cycling, and automobiling; cheap furnished lodgings for the working classes; external and internal decorations; heating, lighting, and ventilation; excavations, construction of sewers and drains; building materials: stone, marble, plaster, lime, cement, bricks, pottery, artificial stone, pressed cork, and mosaics; wood: stairs, flooring, and parquetry; iron: verandas, balconies, elevators, locks, etc.; heating: stoves, hot air, and steam; lighting by gas, electricity, alcohol, and acetylene; roofing: tiles, slates, zinc, lead, copper, cement, and tarred paper; plumbing: pipes, siphons, traps, water-closets, sinks, baths, etc., for private or public buildings; painting and glazing: lead and zinc paints, varnishes, damp destroyers, glue, enamel paints, window and floor glass, mirrors, frames, and gilding; furniture and decoration and all connected therewith; and machinery and tools for the manufacture of furniture.

The show, it will be seen, bids fair to be extremely interesting. It will remain open till November 15. The office of the Exposition de l'Habitation is at 51 Rue Taitbout, Paris.

JOHN K. GOWDY,
Consul-General.

PARIS, FRANCE, *July 28, 1903.*

FOREIGN DEPARTMENT STORES IN GERMANY.

A press account states that a group of Belgian capitalists, under the ægis of the "Credit Générale Liegeois," a Belgian bank, have formed a joint-stock company under the firm name "Société du Grand Bazar de Frankfort." Headquarters of the company is at Liege, Belgium; the working capital is 2,250,000 francs ($540,000); and its object is to establish and conduct a department store in the city of Frankfort.

Some three years ago, in a report to the Department of State which the latter published in the CONSULAR REPORTS, I recommended that our leading manufacturers combine and establish department stores in the principal European cities. I then declared, and now repeat, that by doing so American specialties, as well as leading articles for ordinary consumption, could be readily introduced in the markets of Europe and would soon become so popular there that the best merchants of the other cities and towns would either take the agency for the sale of these American articles or purchase them at wholesale from the American department stores. After American articles had thus become well known and in demand, the larger and more enterprising merchants of Germany would of their own accord search for the American manufacturers who originally supplied these goods. This idea furnishes the most practical method to open and firmly secure foreign markets for products of America, not only manufactured articles but products of agricultural industry as well. For many decades past our manufacturers and commercial bodies, bent on gaining foreign markets for their products, have centered their efforts on Central and South American countries and China and other countries of Asia. In my former reports I declared if these efforts, involving a vast amount of time and money, had been directed upon European markets the results would have been far more compensating to our manufacturers and exporters.

The correctness of this is easily seen when we consider the facts that the cultured and well-to-do people of Europe form an immense mass of customers for the very sort of products which our home population uses, whereas there are, comparatively, but very few people in the countries of Central and South America and of Asia who are used to, or can afford to buy, the better grade of articles produced in the United States. Practical experience has proved the correctness of my statement.

An American firm about two years ago opened a retail store for the sale of American shoes in Berlin; later on they also established a retail store in Frankfort and another in Hamburg. They sell good quality shoes at about $4.25 per pair. The importations of American shoes by this single firm, selling at retail in Germany, will be found to exceed in value our total shoe exportation to any one (or perhaps to two or three of them) of the following countries: Brazil, Chile, Peru, Argentina, Venezuela, Ecuador, Colombia, Nicaragua, Costa Rica, China, Persia, Japan, Asia Minor, etc.

To-day, some of our products, such as dried fruits, canned meats and vegetables, office furniture, typewriters, cash registers, and many articles of ironware used in the construction of buildings, etc., are well established and of constant demand in European markets. But these are few compared to the great number of articles of American make and which could find an equally good market in Europe when once properly introduced there. Take, for instance, household furniture, which we manufacture much better and cheaper; heating and bathing apparatus; carpets, which are cheap in the United States and dear in Germany; household and kitchen articles, which are more convenient and practical than those of Europe, or which are not at all known there. I repeat, the countries of Europe offer the best fields for American manufacturing skill and export enterprise.

SIMON W. HANAUER,
Deputy Consul-General.

FRANKFORT, GERMANY, *August 10, 1903.*

ANTWERP IVORY MARKET.

The third quarterly ivory sale closed July 29, the ivory offered and sold being as follows:

	Pounds.
Kongo:	
Hard	101, 189
Soft	14, 735. 6
Angola	29, 921
Gaboon	2, 868. 8
Kamerun	3, 722. 4
Ambriz	365. 2
Senegal	1, 840. 3
Abyssinia	92. 4
Total	154, 734. 7

Previous sales for this period have been:

	Pounds.
1902	156,577.3
1901	158,856.5
1900	170,937.8
1899	160,397.6
1898	78,229.8
1897	157,812.6
1896	117,497.6
1895	136,400
1894	94,782
1893	138,721

During the two days' sale the bidding ran very high and the total quantity of ivory exhibited was sold at a high rate of increase. The large teeth of all qualities brought from 1 to 1.50 francs (19.3 to 29 cents) per kilogram (2.2 pounds) over and above the prices in May last. Bangle teeth increased from 75 centimes to 1 franc (14.5 to 19.3 cents), and the same was the case for scrivailles. For soft ivory the increase was still greater, being from 3 to 4 francs (58 to 72 cents) for large teeth and 2 francs (38.6 cents) for bangle teeth.

The stock on hand amounts to 290,400 pounds. At this date in previous years it was:

	Pounds.
1902	298,597
1901	279,400
1900	209,000
1899	224,400
1898	174,264
1897	154,000
1896	125,400
1895	316,800

The next quarterly sale will take place November 3.

STANISLAS H. HAINE,
ANTWERP, BELGIUM, *August 4, 1903.* *Vice-Consul-General.*

CONDITION AND TRADE IN ERZERUM.

The continual emigration, notwithstanding the restrictions thereupon, is causing much harm to the commerce of this country. Those desirous of leaving Turkey make application in Erzerum as if to go to some other Turkish city. The applicant has to leave a deposit with the head of the community to which he belongs, who furnishes him with a declaration that he is honest and that he will return to his native place within the limit described in his permit; the deposit is generally from $400 to $600 and serves as a guaranty of taxes during his absence. Not one of those who left has ever been known to come back. About one hundred and fifty families left the city during the last six months. Most of the population (Armenians) are looking for an opportunity to leave. Property owners are selling what they can. Merchants have reduced their usual stock orders to less than half, keeping as much cash as they can, some with the intention of leaving the country forever, and others through fear of earthquakes, which seem to be frequent in this region since 1901.

The imports into Erzerum during the first six months of 1903 amounted to only $178,970. The countries contributing thereto were:

Country.	Article.	Value.
England	Tea, calico, cloth, and prints	$40,500
France	Sugar, coffee, and silk	30,700
Belgium	Scythes, window glass, and cloth	50,700
Russia	Petroleum, wood, horses, and glassware	45,000
Persia	Rice, carpets, and shawls	12,070

The exports during the same period amounted to $40,700, composed of dry beef, barley, and sheep sent to Turkish provinces.

VITAL OJALVO,
Vice-Consul.

ERZERUM, TURKEY IN ASIA, *July 6, 1903.*

WORLD'S IRON AND STEEL PRODUCTION.

[Prepared in the Bureau of Statistics, Department of Commerce and Labor.]

Sir A. E. Batemen, president of the commercial labor and statistical department of the Board of Trade of the British Empire, submitted an elaborate report recently, through the Board of Trade, to the British Government. The report is a "return" to an order of the House of Commons. It is interesting to the United States as an industrial and commercial nation. From it the following excerpts have been taken:

The tables which follow are intended to give a survey of the production and consumption of iron ore and of pig iron during the twelve years 1890–1901, inclusive, in those countries of the world in which iron-ore mining and the production of pig iron have assumed important dimensions. The countries included in these tables are the United Kingdom, Germany (including Luxemburg), the United States, France, Russia, Sweden, Belgium, Spain, and Austria-Hungary. The figures for Austria and Hungary are grouped together, as the existing customs union renders it impossible to separate the foreign trade of the two countries. For the same reason the figures for Luxemburg are included with those for Germany.

The figures given in the tables with regard to iron ore and pig iron are in nearly every case extracted directly from, or based on, the published official returns of the countries concerned, the principal exceptions being those giving the production of iron ore in Russia, which are taken from the mineral statistics of Sweden,* and those giving the production of pig iron in Spain, which are taken from the successive reports of the United States Geological Survey.

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*See "Bidrag till Sveriges Officiela Statistik (C) Bergshandteringen" for 1901, p. 23. The figures for 1898 and 1899 are, however, taken directly from the Russian Mining Report for 1899.

To these tables are appended a short table, giving such particulars as are available of the production of steel in the countries named, the particulars being obtained from various sources, including those collected by the representative associations of iron and steel manufacturers in certain countries.

The quantity of pig iron produced outside the countries named is only very small, and probably amounts altogether to less than 1,000,000 tons. A certain quantity of iron ore is, however, mined in other countries and exported, to a large extent, to one or other of the principal iron-smelting countries. A short table is given in the appendix dealing with the production and export of iron ore in certain of these countries, of which the most important are Newfoundland, Greece, Algeria, Canada, Cuba, and Italy (mainly the island of Elba). Such particulars are given as are available for the last three years for each of these minor producing countries, whose total production amounts to about 3,000,000 tons.

IRON ORE.

The total output of iron ore in the world probably amounted in 1901 to between 85,000,000 and 90,000,000 tons, the principal producers being the United States, Germany, the United Kingdom, and Spain, in the order given, these countries among them accounting for about three-fourths of the total output of the world.

The following statement shows the total output of iron ore in the principal countries in which it is mined, or in which the smelting of iron is an important industry, in each of the years 1899–1901, together with the proportionate amount produced per head of population in each country:

Country.	Total production.			Production per head of population.		
	1899.	1900.	1901.	1899.	1900.	1901.
	*Tons.**	*Tons.**	*Tons.**	*Tons.**	*Tons.**	*Tons.**
United States	24,683,000	27,553,000	28,887,000	0.33	0.36	0.37
Germany (including Luxemburg)	17,990,000	18,964,000	16,570,000	.33	.34	.29
United Kingdom	14,461,000	14,028,000	12,275,000	.35	.34	.30
Spain	9,398,000	8,676,000	7,907,000	.51	.48	.43
Russia	5,790,000	6,200,000	....	.04	.05	....
France	4,986,000	5,448,000	4,791,000	.13	.14	.12
Austria-Hungary	3,293,000	3,529,000	3,520,000	.07	.08	.08
Sweden	2,435,000	2,609,000	2,795,000	.48	.51	.54
Belgium	214,000	259,000	227,000	.03	.04	.03

* Metric tons of 2,204 pounds, except in the case of the United Kingdom and the United States, for which the particulars are given in tons of 2,240 pounds.

It will be observed that relatively to the population both Sweden and Spain have a production of iron ore considerably in excess of the other countries included above, amounting to about half a ton per head of population; in the United States, the United Kingdom, and Germany the production amounts to about one-third of a ton per head; while in France, Russia, Austria-Hungary, and Belgium the proportionate production per head is much less.

The quantity of iron ore mined in the countries included above was less by about 4,000,000 tons in 1901 than in 1900, there being a large falling off in the United Kingdom (where the quantity mined was less than in any year since 1893) and in Germany and a considerable increase in the United States. At the beginning of the period included in the tables, *i. e.*, in 1890, the quantity mined in the United Kingdom was slightly greater than in Germany, though less than in the United States.

The maximum output in this country [England] was reached in 1882, when it amounted to over 18,000,000 tons. The greatest proportionate increase of production during the twelve years has taken place in Sweden, the quantity mined at present being nearly three times as great as in 1890 and 1891.

As stated above, about 3,000,000 tons of iron ore are produced in countries other than those given in the preceding table, the greater part of which is destined for exportation.

The following statements show the quantity produced in the more important of these countries and British colonies in the years 1899–1901:

Country.	Total production.		
	1899.	1900.	1901.
	*Tons.**	*Tons.**	*Tons.**
Newfoundland	307,000	317,000	738,000
Canada	67,000	109,000	(†)
Italy	266,000	274,000	257,000
Greece	629,000	524,000	....
Algeria	551,000	602,000	515,000
Cuba ‡	387,000	410,000	603,000

* Metric tons, except in the case of Newfoundland and Canada, for which the particulars are given in tons of 2,240 pounds.

† Not available. The exports during the twelve months ended June 30, 1902, amounted to 470,000 tons.

‡ Exports. The figures for production are not available.

Additional table.

Country.	Production of iron ore.			Exports of iron ore.		
	1899.	1900.	1901.	1899.	1900.	1901.
British colonies and possessions.	*Tons of 2,240 lbs.*	*Tons of 2,240 lbs.*	*Tons of 2,240 lbs.*	*Tons of 2,240 lbs.*	*Tons of 2,240 lbs.*	*Tons of 2,240 lbs.*
Australia	30,389	30,770	26,664	*237	*267	*216
Canada	66,622	108,929	....	†3,863	†53,126	†469,628
Newfoundland	306,880	317,216	738,206	†312,190	†455,554	†730,040
British India	61,352	63,073	....	‡10	‡1	‡15
Foreign countries.	*Met. tons.*	*Met. tons.*	*Met. tons.*	*Met. tons.*	*Met. tons.*	*Met. tons.*
Finland	80,115	89,281	....	24,487	28,174	18,481
Norway	4,576	17,925	....	12,517	27,157	39,173
Italy	266,423	274,078	256,589	§234,515	§170,286	§126,464
Bosnia and Herzegovina	67,085	133,454	122,569	44,169	43,794	39,330
Greece	628,512	523,804	....	464,398	391,688	....
Algeria	550,941	601,788	514,473	632,280	606,337	572,812
Cuba	No information.			386,900	409,815	603,13

NOTE.—The figures for the production of Finland are taken from the Swedish Official Mining Report. Those for the production of the other foreign countries included and for the production of Newfoundland and British India are taken from the general reports on mines and quarries issued by the home office.

* Exports to places outside the Australian Commonwealth.

† Twelve months ended June 30 of years following those stated.

‡ Twelve months ended March 31 of years following those stated.

§ Including a small quantity of iron pyrites.

The iron ores used for smelting are of very various chemical constitution, and occur in several different geological formations. They are also of very different richness, the quantity of iron they yield ranging from as little as 20 per cent of their weight to as much as 60 per cent.

The area from which iron ore is produced is often only a small portion of the country in which it is found. Thus, in the United States nearly three-fourths of the total output (20,764,000 tons in 1901 out of a total of 28,887,000 tons) is derived from the States of Michigan and Minnesota. In France about four-fifths is derived from the single Department of Meurthe-et-Moselle. In Germany the iron mines are spread over a rather wider area, but are mainly found in the western portion of the Empire (Alsace-Lorraine, Westphalia, and Rhenish Prussia) and in Luxemburg. In Spain the three extreme northern Provinces of Vizcaya, Santander, and Oviedo account for the greater part of the output, although a certain quantity is mined in the south (Seville and Huelva).

In the United Kingdom the iron-ore mines and quarries occur mainly in three groups, Cleveland or North Yorkshire producing a variety of clay ironstone; Lincolnshire, Northamptonshire, and Leicestershire producing brown iron ore, rather poor in iron, mainly from open workings; and Cumberland and Lancashire producing red hematite, the richest ore in the country.

At the opposite poles, with regard to iron production, stand Spain and Belgium. The former exports almost the whole of her output, while the latter imports almost the whole of the iron ore she requires for the purposes of her iron and steel industries. Of the remaining countries Sweden exports the major portion of her production. In the case of both Austria-Hungary and Russia, the exports are slightly—though very slightly—in excess of the imports. The United Kingdom, France, Germany, and the United States are all importing countries, though in different degrees. The first derives about one-third of the ore she utilizes from abroad, her exports being only trifling. The exports from France are also small, and from one-fourth to one-third of the ore smelted is derived from abroad. The exports from Germany are more considerable, but are exceeded by the imports. The United States imports and exports but little, and her consumption is only slightly in excess of her production.

The following statement shows the total quantity of iron ore consumed in each of the countries named, together with the proportionate amount consumed per head of population:

Country.	Total consumption.			Consumption per head of population.		
	1899.	1900.	1901.	1899.	1900.	1901.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
United States	25,316,000	28,400,000	29,789,000	0.34	0.37	0.38
Germany (including Luxemburg)	19,035,000	19,824,000	18,550,000	.34	.35	.33
United Kingdom	21,504,000	20,318,000	17,812,000	.53	.49	.43
France	6,646,000	7,195,000	6,195,000	.17	.18	.16
Russia	5,409,000	5,817,000	....	.04	.04	....
Austria-Hungary	3,178,000	3,499,000	3,508,000	.07	.08	.08
Belgium	2,517,000	2,367,000	1,668,000	.37	.35	.25
Sweden	807,000	989,000	1,034,000	.16	.19	.20
Spain	785,000	853,000	1,013,000	.04	.05	.05

It will be seen that the total consumption of iron ore in these countries exceeds by about 2,000,000 tons the production of the same countries, the balance being made up of imports from one or other of the minor producing countries, shown in "the additional table" under "production."

In 1901, for the first time, the consumption of iron ore in Germany exceeded that of the United Kingdom.

Of the 5,500,000 tons imported into the United Kingdom in 1901, 4,750,000 tons were derived from Spain, 304,000 tons from Greece, and 189,000 tons from Algeria.

Relatively to its population, the weight of iron ore consumed is greater in the United Kingdom than in any other country, the United States taking the second and Germany the third place in this respect.

In considering these figures in connection with those given below for the production of pig iron, it must be recollected that no allowance is made for other iron-producing materials which are occasionally made use of by smelters. Of these, one of the principal is roasted pyrites, a mineral mined primarily for sulphur extraction, a certain amount of copper as well as small quantities of gold and silver being also obtained therefrom. In this country, especially, a quantity of cupreous iron pyrites is imported from Spain, and the refuse of the sulphur and metal extraction works, known as purple ore, is utilized in the blast furnaces. The total quantity of purple ore so used in the United Kingdom amounts to about 500,000 tons. A certain amount of mill and forge and other descriptions of cinder is also utilized, but the total quantity of all these materials is probably not large.

On the other hand, a certain quantity of iron ore is used, not in the production of pig iron, but in connection with the open-hearth process of steel manufaeture.

PIG IRON.

The total quantity of pig iron produced in the world in 1901 probably amounted to about 40,000,000 tons, the principal producers being the United States, the United Kingdom, and Germany in the order named, these countries between them accounting for about three-fourths of the total output.

The figures given in the tables include in some cases a small quantity of castings obtained directly from the blast furnaces.

The following statement shows the total output of pig iron in the countries for which particulars as to iron ore mined and consumed have already been given in each of the years 1899 to 1901, together with the proportionate amount produced per head of population in each country:

Country.	Total production.			Production per head of population.		
	1899.	1900.	1901.	1899.	1900.	1901.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
United States*	13,621,000	13,789,000	15,878,000	0.18	0.18	0.2
United Kingdom*	9,421,000	8,960,000	7,929,000	.23	.22	.19
Germany (including Luxemburg)*	8,130,000	8,507,000	7,867,000	.15	.15	.14
Russia	2,674,000	2,887,000	2,821,000	.02	.02	.02
France	2,578,000	2,714,000	2,389,000	.07	.07	.06
Austria-Hungary	1,468,000	1,456,000	1,482,000	.03	.03	.03
Belgium	1,025,000	1,019,000	764,000	.15	.15	.11
Sweden	498,000	527,000	528,000	.1	.1	.1
Spain	296,000	294,000	....	.02	.02	....

* Preliminary figures can also be given for the production of the United States, the United Kingdom, and Germany in 1902, which amounted to 17,821,000, 8,518,000, and 8,403,000 tons, respectively.

It will be observed that in 1901 the production of pig iron was not so great in Germany or in the United Kingdom as in the previous year. Hitherto the German production had increased year by year, especially during the last few years of the century, and is now nearly as great as that of this country. The United States made no important advance in production until the last few years of the period included. During the last five years its progress has been even more remarkable than that of Germany. It is instructive to compare the progress made by the three principal producing countries during the last quinquennial period included in the tables, and with this object in view the following statement has been prepared, showing the average production of pig iron in the years 1894-1896, inclusive, and 1899-1901, inclusive, with the percentage increase of the production during the five years' interval:

Country.	Averge production of pig iron.		Percentage increase of production in five years.
	1894-1896.	1899-1901.	
	Tons.	*Tons.*	*Per cent.*
United States	8,242,000	14,429,000	75
United Kingdom	7,930,000	8,770,000	11
Germany (including Luxemburg)	5,729,000	8,168,000	43

Thus the United States, which five years earlier produced an amount of pig iron only slightly in excess of the production of the United Kingdom, produced at the end of the century an amount little short of that of the United Kingdom and Germany taken together. While the production of this country during the five years only increased by 11 per cent, that of Germany increased by 43 per cent and that of the United States by 75 per cent.

Relative to the population of the two countries, the production in the United States and United Kingdom was in 1901 nearly the same, viz, about one-fifth of a ton per head, while that of Germany amounted to about one-seventh of a ton per head.

The extent to which pig iron enters into foreign trade is small in proportion to the quantity produced. Both the United Kingdom and the United States, as well as Spain and Sweden, export more than they import. Germany, Belgium, France, Russia, and Austria-Hungary, on the other hand, are importing countries, their imports, though not large, being in excess of their exports.

For the purposes of these tables the quantity of pig iron imported for manufacture under customs supervision, with a view to subsequent export ("admission temporaire" in France, and "Veredelungsverkehr" in Austria-Hungary and Germany), is included with the other imports for home consumption.

The exports for pig iron from the United Kingdom are more than twice as great as the total exports of all the other countries included in the tables, though on an average of the three years 1899-1901 they only amounted to 1,216,000 tons, or 14 per cent of the average production of those years.

As will be apparent from what has been said above, the consumption of pig iron in the principal producing countries differs but slightly from the production in those countries. The United Kingdom has, however, during the last three years consumed rather less pig iron than Germany, and accordingly occupies the third place in the statement below, which shows the total quantity consumed and the quantity consumed per head of population in the countries included in the table:

Country.	Total consumption.			Consumption per head of population.		
	1899.	1900.	1901.	1899.	1900.	1901.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
United States	13,432,000	13,554,000	15,860,000	0.18	0.18	0.2
Germany (including Luxemburg)	8,561,000	9,105,000	7,985,000	.15	.16	.14
United Kingdom	8,208,000	7,705,000	7,285,000	.2	.19	.18
Russia	2,810,000	2,939,000	2,836,000	.02	.02	.02
France	2,613,000	2,832,000	2,430,000	.07	.97	.06
Austria-Hungary	1,567,000	1,522,000	1,536,000	.03	.03	.08
Belgium	1,371,000	1,317,000	914,000	.2	.2	.13
Sweden	457,000	494,000	481,000	.09	.1	.09
Spain	257,000	279,000	....	.01	.02	....

STEEL.

The following statement shows the total quantity of steel produced, and the quantity produced per head of the population, in the years 1899–1901, inclusive, in the countries for which similar information has already been given with regard to the production of pig iron, except Austria-Hungary, for which no statistics of steel production are available:

Country.	Total production.			Production per head of population.		
	1899.	1900.	1901.	1899.	1900.	1901.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
United States *	10,640,000	10,188,000	13,474,000	0.14	0.13	0.17
Germany (including Luxemburg)*	6,290,000	6,646,000	6,394,000	.12	.12	.11
United Kingdom *	4,855,000	4,901,000	4,904,000	.12	.12	.12
Russia	1,877,000	....	....	.014	....	....
France	1,499,000	1,565,000	1,425,000	.04	.04	.04
Belgium	731,000	655,000	653,000	.11	.1	.1
Sweden	272,000	300,000	269,000	.05	.06	.05
Spain	113,000	144,000	121,000	.006	.008	.006

*Preliminary figures can also be given for the production of the United States, Germany, and the United Kingdom in 1902, which amounted to 14,994,000, 7,781,000, and 4,849,000 tons, respectively.

Ranged according to their importance as producers of steel, the above countries stand in the same order as when ranged according to their consumption of pig iron. In both the United States and Germany, however, a larger proportion of the pig iron consumed is converted into steel than in the United Kingdom. For every 100 tons of pig iron consumed for all purposes, the United Kingdom produced on an average of the three years 1899–1901 about 63 tons of steel, while Germany produced 75 tons and the United States 80 tons.

No figures are available as to the amount of pig iron which is converted into steel in the various countries, but the extent to which steel has tended in recent years to replace iron may perhaps be illustrated by comparing the quantities of steel produced for every 100 tons of pig iron consumed for all purposes in the

United Kingdom, Germany, the United States, Russia, France, and Belgium in successive periods, and this is done in the following statement:

Country.	Number of tons of steel produced for every 100 tons of pig iron consumed for all purposes.		
	1890.	1894-1896.	1899-1901.
	Tons.	*Tons.*	*Tons.*
United Kingdom	52	48	63
Germany (including Luxemburg)	45	70	75
United States	46	64	80
Russia	36	56	*67
France	36	46	57
Belgium	24	44	57

* In 1899.

Thus, in all these countries the production of steel has increased considerably faster than the consumption of pig iron.

It is not necessary to enter here into detail as regards the different processes of steel manufacture, but it may be mentioned that while, roughly speaking, the quantity of steel produced by the open-hearth process in the United Kingdom is at present double of that produced by the Bessemer process, in Germany and the United States the proportions are reversed, about two-thirds of the total production of these countries consisting of Bessemer steel.

The quantity of pig iron consumed in the manufacture of 1 ton of Bessemer steel being greater than that consumed in the manufacture of 1 ton of steel by the open-hearth process, it follows that the proportion of iron converted into steel in the United States and Germany is even greater, as compared with the United Kingdom, than would appear from the figures given in the above statement.

Before concluding this memorandum, it may be of interest to refer to the available sources of manganese ore, a substance which (though in small quantities) is a necessary element in the production of steel.

Of the principal steel-producing countries, only Russia and Germany produce manganese ore in important quantities, though even in Germany the home supply has to be supplemented by large importations from other countries. The principal sources of supply are Russia, British India, Brazil, and Spain.

The following statistics of the production in these countries and in Germany in 1900 and 1901 are taken from the general reports on mines and quarries issued by the home office:

Country.	Output of manganese ore.	
	1900.	1901.
	Met. tons.	*Met. tons.*
Russia	802,234	(*)
British India †	132,767	135,307
Brazil †	108,244	100,414
Spain	112,897	60,325
Germany	59,204	56,691

* Not available. † Quantities exported.

SUPPLEMENTAL STATEMENT.

[Compiled in the Bureau of Statistics, Department of Commerce and Labor.]

IMPORTS INTO THE UNITED STATES OF IRON AND STEEL, AND MANUFACTURES OF, FOR 1901 AND 1903.

Article.		1901.		1903.	
		Quantity.	Value.	Quantity.	Value.
Iron ore ... tons	Dutiable	771,457	$1,135,271	1,043,565	$2,351,278
Pig iron ... do	Dutiable	39,325	1,355,231	956,198	16,830,592
Scrap iron and steel, fit only to be remanufactured .. tons	do	20,414	340,732	135,901	2,019,258
Bar iron ... pounds	do	39,747,497	1,035,232	96,695,208	1,844,486
Bars (railway) of iron or steel or in part of steel, tons	do	1,091	48,650	122,994	2,874,188
Hoop, band, or scroll, pounds	do	768,117	22,526	3,498,551	93,864
Ingots, blooms, slabs, billets, and bars of steel and steel in forms n. e. s ... pounds	do	19,844,640	1,281,329	850,026,997	9,834,236
Sheet, plate, and taggers, iron or steel ... pounds	do	4,891,523	266,403	18,061,516	481,481
Tin plates, terne plates, and tin taggers (pounds, dutiable), imported from:					
United Kingdom		116,876,278	3,735,106	109,605,243	3,195,624
British North America		1,003,368	34,879	246,177	9,792
Other countries		666	77	61,873	4,499
Total		117,880,312	3,770,062	109,913,293	3,209,915
Wire rods ... pounds	Dutiable	41,588,192	1,082,827	51,497,919	1,137,370
Wire, and articles made from ... pounds	do	6,242,160	488,304	8,584,797	643,848
Anvils ... do	do	525,673	35,372	406,982	26,405
Chains ... do	do	322,390	23,883	1,411,593	66,069
Cutlery	do		1,596,668		1,782,970
Files, file blanks, rasps, and floats	do		59,779		82,485
Firearms	do		924,447		728,077
Needles, hand-sewing and darning	Free		383,034		442,887
Machinery	Dutiable		3,324,765		4,085,825
Shotgun barrels, in single tubes, forged, rough-bored	Free		265,276		232,544
All other	Dutiable		1,570,269		5,200,812
Total iron and steel, etc., not including ore			17,874,789		51,617,312

PRODUCTION OF IRON AND STEEL BY THE UNITED STATES, GREAT BRITAIN, AND GERMANY FOR THE YEAR 1902.

Country.	Pig iron.		Steel.	
	Total.	Increase.	Total.	Increase.
	Metric tons.	*Metric tons.*	*Metric tons.*	*Metric tons.*
United States	18,003,448	1,871,040	15,186,406	1,497,233
Great Britain	8,653,976	676,517	5,102,420	6,119
Germany	8,402,660	616,773	7,780,682	386,460
Total	35,060,084	3,164,330	28,069,508	1,889,812

The following is a résumé of an article on iron and steel in the Engineering and Mining Journal and the Bulletin:

For the year 1902 the United States produced 40 per cent of the world's iron and steel, and the United States, Great Britain, and Germany produccd 78 per cent of the world's total product. The production of pig iron in the first half of 1903 for the United States was 9,707,367 gross tons, against 8,808,574 tons in the first half of 1902. The increase in production in the first half of 1903 over the second half of 1902 was 694,634 tons. The united production of the second half of 1902 and the first half of 1903 amounted to 18,720,100 tons.

Germany has increased its exports for the first four months of 1903 by 246,332 tons, or 26.52 per cent, against an increase of 57,675 tons, or 32.28 per cent, in case of Belgium and an increase of 26,068 tons, or 17.47 per cent, in the case of France. These three sets of figures, taken together, make a total of 330,075 tons, which is the gross increase of the three countries in the first four months, and which compares with an increase of 261,490 tons in British exports of iron and steel for the same period. The German exports for this period have been at the rate of 3,525,000 tons a year, which is much in excess of the corresponding German exports for any previous year. The German increase in 1903 up to the present time has chiefly appeared in pig iron, merchant iron, rails, and unwrought steel.

OCCUPATION OF POPULATION OF PRINCIPAL COUNTRIES OF THE WORLD.

The Statistical Yearbook for the German Empire for 1903, just published, gives the following figures with reference to the occupation of the population of different countries:

In Germany 8,300,000 persons (37.5 per cent of the total self-supporting population) are engaged in agriculture and forestry and about the same proportion (37.4 per cent) in mining and the other industries; 2,300,000 (10.6 per cent) in commerce and transportation; 631,000 persons (2.8 per cent) in the army and the navy; and 800,000 (3.6 per cent) in official positions other than the army and navy.

The following table shows the proportion of the self-supporting population of various countries engaged in agriculture, the industries, and commerce:

Country.	Agriculture.	Industries.	Commerce.
	Per cent.	*Per cent.*	*Per cent.*
Austria	38	37	11
Hungary	64	22	6
Italy	57	28	4
Switzerland	37	41	11
France	44	34	9
England and Wales	10	57	11
Scotland	14	58	10
Ireland	44	31	5
Great Britain	15	54	10
United States	36	24	16

With reference to the percentage of females employed, the United States stands first with only 14.3 per cent, the Netherlands and Sweden coming next. In Germany the percentage of females employed to the total self-supporting population is 25, while in England it runs up to 27.

In most of the other civilized countries the female population, on account of unfavorable economic conditions, has to contribute in a larger degree to the support of the families. In Italy the percentage is 40 and in Austria 47.

RICHARD GUENTHER,
Consul-General.

FRANKFORT, GERMANY, *July 25, 1903.*

WHITE POPULATION OF THE BRITISH COLONIES.

In the general discussion of the fiscal system of Great Britain and colonies, which Mr. Chamberlain, the Colonial Secretary, invited, there are many articles and cards in the newspapers which are both interesting and important, and I propose to forward, from time to time, informally and without comment, such selections as I think are suitable for consular publication.

I now inclose an article by Mr. W. P. Reeves on the white population of the chief British colonies, printed in the London Times of July 8.

MARSHAL HALSTEAD,
Consul.

BIRMINGHAM, ENGLAND, *July 18, 1903.*

WHITE POPULATION OF THE CHIEF COLONIES.

The population of the principal British colonies is just now a matter of special interest. The figures given with regard to it by writers and speakers differ widely. This is not surprising, as most of the statements are based upon official returns published from two to twelve years ago. Perhaps a cautious estimate of the numbers of the white colonial population at the present moment may be of a little service. I have been at some pains to make one and I believe that the figures given below will be found pretty close to the mark. In the case of Africa south of Zambesi, it is impossible to hope for exactness, and I have therefore given a figure slightly below what seems to me probably correct. The total—11,075,000—will doubtless appear low to many colonists, but I must remind these that to arrive at my result not only aborigines but Asiatics resident in the colonies have been deducted.

White population in July, 1903.

Canada	5,525,000
Australia	3,860,000
South Africa	875,000
New Zealand	815,000
Total	11,075,000

An eminent American has lately stated in a London newspaper, "Your colonies do not grow." It may interest anyone who may have been impressed by this broad assertion to be told that for some little time past the average increase of whites in our colonies has been at the rate of about 20,000 per month.

PARAGUAYAN-EUROPEAN THROUGH BILLS OF LADING.

Recently there has been established between the Republic of Paraguay, France, and Germany arrangements by which through bills of lading can be granted on merchandise shipped from Asuncion to Germany and France. This affords better facilities for exportation to Europe than existed before, as well as for goods coming from Europe destined for the port of Asuncion. Exporters making shipments from the port of Asuncion have now no difficulty whatever, for the reason that their goods are delivered to the steamboat company which plies on the River Plata and which acts as agents for the ocean liners plying between Buenos Ayres and Europe. For instance, the Mihanovich Steamboat Company takes charge of the merchandise in good shape, transships the same at Buenos Ayres for the European port, and delivers to the exporter a through bill of lading from Asuncion to Europe, to which bill of lading drafts are attached and are discounted by the banks here. This arrangement relieves the exporter of any anxiety whatever as to his shipments, because his responsibility ceases the moment he delivers his products in good condition to the steamship company at Asuncion. This is a very powerful company financially, and shippers feel perfectly safe in delivering merchandise thereto. I inclose a translation of a blank bill of lading, together with the original, which is in German because it is intended for a German port. This is a through bill of lading which the Mihanovich Company gives for goods shipped to Germany.*

Many of the shippers here inform me that if they could get through bills of lading to New York they would be willing both to ship and receive goods to and from the United States. In this manner the shipper in the United States could give a through bill of lading with his draft attached, which could be presented by the steamboat company here to be honored or accepted before the merchandise was delivered. It seems to me that this could be arranged by some of the steamship companies plying between New York and Buenos Ayres with some of the river boat companies, viz, either the Mihanovich Company, which has its headquarters in Buenos Ayres, or the Lloyd Brazilian Company, whose headquarters are in Rio de Janeiro.

JOHN N. RUFFIN,
Consul.

ASUNCION, PARAGUAY, *June 18, 1903.*

THE ZEBRULA VS. THE MULE.

German papers say the mule will probably be replaced in the twentieth century by a more efficient animal, as it has been demonstrated that the mule, the cross between horse and donkey, is inferior to the cross between horse and zebra.

Formerly the opinion prevailed that the zebra was almost extinct. The opening up of Africa, particularly the eastern part, reveals these fine animals in large numbers.

Compared with horses and cattle, they possess peculiar advantages, as they are immune against the very dangerous horse disease of Africa and also against the deadly "tsetse" fly. The question was therefore raised whether the zebra could not take the place of the mule, commonly used in the Tropics. The greatest credit with reference to the solution of this problem is due to Prof. Cossar Ewart, who has been trying since 1895 to produce crosses between horses and zebras, with a view to developing an animal superior in every respect to the mule.

Three species of zebras still exist in Africa: the so-called "Grevy" zebra, on the high plateaus of Schoa; the common or mountain zebra, formerly found everywhere in South Africa; and the "Burchell" zebra, still frequently found.

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* The bill of lading is on file in the Bureau of Statistics, Department of Commerce and Labor.

Professor Ewart produced crosses from mares of different breeds and zebra stallions of the Burchell kind. The offspring is called zebrula, and on account of its form and general bodily condition—especially the hardness of the hoofs—is specially adapted for all transport work heretofore performed by mules. The zebrula is much livelier than the mule and at least as intelligent.

The Indian government has already experimented with zebrulas for transporting mountain artillery at Quetta.

In Germany much interest in this animal is manifested. The well-known Hagenbeck is experimenting in this direction and intends to introduce the zebrula into Germany and America. The zoological garden at Berlin possesses some very fine specimens. The zebra stripes are often well preserved, while the undertone of the skin is generally that of the mother. A full-grown zebrula is 14 hands high and the girdle circumference about 160 centimeters (63 inches).

The experiments so far have been so successful that it is predicted that the zebrula during the present century will completely supersede the mule.

RICHARD GUENTHER,
Consul-General.

FRANKFORT, GERMANY, *July 18, 1903.*

HAITIEN EXPORTS OF COFFEE PICKINGS.

I transmit herewith a translation of a law promulgated on the 7th instant, fixing the export duty on coffee pickings at $2 ($1.96 United States) per 100 pounds. The law went into immediate effect, but will cease to be operative on September 30 next, when coffee pickings will again become subject to the regular coffee export duty of $3 ($2.895 United States) per 100 pounds.

ALEXANDER BATTISTE,
Deputy Consul-General.

PORT AU PRINCE, HAITI, *July 15, 1903.*

EXTRACTS FROM THE LAW.

Nord Alexis, President of the Republic, considering that the bad preparation of our coffee is the principal cause of the lowering of its price on the foreign markets, that it is incumbent on the public authorities to remedy a state of affairs as prejudicial to the producers as to the fiscal interest; considering that the means the least fit to attain this result, as much on account of the fraud that it favors as by the encouragement it gives tacitly to the producers, is the liberty to the latter to deliver this product to commerce in whatever condition it pleases them, with black, broken, or bleached beans, and even with stones; considering that if a certain class of financial embarrassments and the necessity to promptly relieve it can in default of more efficacious measures cause to permit the exportation of these remainders of coffee, it is of importance nevertheless to restrain that permission as much as possible, in the interest of the State and of the producer himself, has proposed, and the legislative corps has voted, the following law:

ARTICLE 1. The fragments of coffee and the bad grains of that bean, thrown aside as inferior at the time of the preparation and in which is to be found mixed not more than 5 or 10 per cent of good beans, shall pay on and after the promulgation of the present law the sole export duty of $2 per 100 pounds.

ART. 2. No shipment of the remainder of coffee called "pickings" can be made from a port of the Republic for a foreign port without the express authorization of the Secretary of State of Commerce.

Each bag of coffee shall be inspected and shall have in full and large letters the words "coffee pickings" thereon.

ART. 3. Shippers may be forbidden to ship of remainder or pickings of coffee more than 10 per cent of their shipments of coffee. In this case this 10 per cent shall not be counted in any one shipment, and, for the appreciation of same, account shall be taken of their anterior shipments made during the course of the fiscal year.

POULTRY TRADE OF HUNGARY.

The secretary of the Hungarian National Society for Poultry Rearing, Mr. Julius J. Patak, is making a tour of Hungary in the interest of an increased and centralized export of Hungarian poultry to foreign markets.

In a letter to the poultry raisers of the city of Kassa, he calls attention to the exports of 1902 and says that in the near future Hungary will export more poultry than grain.

Hungary exports turkeys, geese, ducks, and chickens to England, where they now compete more successfully than formerly with American poultry. The poultry culture of Hungary, says Mr. Patak, pays ten times as much to farmers as any other branch of agriculture. Beef is dear and pork has gone up in price, while thousands are making money in the export of eggs alone, and raisers of poultry are sure to find a good domestic, if not also a foreign, market.

Owing to its being a railroad center, the city of Kassa offers a splendid starting point for the export of north Hungarian poultry, and a poultry-rearing union will probably be organized there this year.

FRANK DYER CHESTER,
BUDAPEST, HUNGARY, *July 9, 1903.* *Consul.*

RUSSIAN ENTERPRISE IN THE ORIENT.

The Russian steamer *Veliky Kinaz Alexander Michailovitch*, with 2,000 tons of lumber for the Chinese Eastern Railway, arrived at Niuchwang a few days ago. This is the first of a new Russian line of steamers entering into the coasting trade of Siberia, Japan, Korea, and China. The name of the company is the Pacific Steamship Company Energia, with head office at Vladivostock. The company was organized in 1892 under the patronage of the Grand Duke Alexander Michailovitch, Minister of Commercial Navigation of Russia. This steamer is to be followed by several others very soon.

Many other lines of Russian steamers are now actively engaged in the Pacific traffic, and passengers who travel between Dalny and Japan and Dalny and Shanghai say the steamers *Manchuria* and *Mongolia* of the Chinese Eastern Railway are as well furnished, as comfortable, and as well provided in every way as any steamers now on the Pacific Ocean, not excepting the new steamers of the Pacific Mail, *Siberia* and *Korea.*

Another feature to be noted in connection with the cargo of this new steamer from Vladivostock is the fact that it consisted of lumber from Siberia. This is the first lot of a large amount that is to be brought here for the Chinese Eastern Railway. I am not advised as to the extent of the mills and forests of Siberia and am not prepared to say to what extent this new timber supply will cut into the Chinese market for American lumber, but I have been informed, in a general way, that the possibilities of development of the lumber industry in Siberia adjacent to the Pacific and on the island of Sakhalin are considerable. In a large contract for lumber for Dalny that was let recently, the American firms were beaten by Russian firms supplying the lumber from Siberia.

The Yalu Timber, Mining, and Development Company is entering very extensively into the timber business on the Yalu and is preparing to construct a sawmill on the Korean side of the river at the mouth of the Yalu. I am advised by the Japanese consul, who has recently visited that section, that the amount of timber being rafted down the Yalu by this company this year will be enormous. I am therefore of the opinion that Russian timber enterprises will bring severe competition, especially in North China, with lumber from the United States.

I have also to report that the Russo-Baltic Steamship Company of Riga is sending its steamer *Sigrid* to this port, to arrive in July, with 25,000 cases of kerosene. The principal trade of the United

States in Manchuria has consisted of cotton goods, kerosene, lumber, and flour. These items made up nineteen-twentieths of all our imports.

Russia is actively engaged in an effort to secure the trade in each one of the lines indicated above. She is sending cotton goods from Moscow, kerosene from southern Russia, lumber from Siberia and the Yalu, and flour from Harbin.

HENRY B. MILLER,
Consul.

NIUCHWANG, CHINA, *June 24, 1903.*

NOTES.

American Opportunity in Austria.—The municipality of Carlsbad, the celebrated water-cure resort in Bohemia, is taking a loan of 12,000,000 crowns ($2,424,000), to be expended in various improvements and new structures, among the latter being a bathing hall and an assembly building, and the extension of the waterworks and of the electric plant. This ought to offer a good opportunity for the introduction of American bathing arrangements and plumbing work, constructive iron, and novelties in brass and nickel mountings.

By thus introducing American articles, which are all superior to those manufactured in Europe, they will become known to the thousands of builders and architects, public officials, hotel keepers, and wealthy householders who annually come to Carlsbad. In this way the large expense attending the introduction of those articles through the usual channels of trade would be saved.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 12, 1903.*

Hungarian-Mexican Trade.—Commercial relations having been resumed by Austria-Hungary with Mexico on the most-favored-nation basis, Schenker & Co., a firm of forwarding agents, have begun running their Austro-Americana steamers, via West Indies and Central America, to Mexican ports. In conjunction with this movement, Hungary and Austria hope to export, via Fiume and Trieste, to the United States, with better success in transit through Mexico than, as hitherto, direct to New York.—*Frank Dyer Chester, Consul, Budapest, Hungary, July 17, 1903.*

Plaster of Paris in Hungary.—At the request of a Chicago gypsum company, I have made inquiries into the plaster-of-paris industry in Hungary with the following results:

The annual consumption of plaster of paris in Hungary is estimated at 1,000 carloads. There are five Hungarian factories working, but only at half their capacity. The plaster is very widely used for building and sculptural purposes. The gypsum is imported into Hungary mainly from Austria, with small quantities from Germany, France, Italy, and Great Britain, in the order given. The exports are five times larger than the imports and go to Austria, Bulgaria, Roumania, Servia, and European Turkey.—*Frank Dyer Chester, Consul, Budapest, Hungary, July 23, 1903.*

Import of Croatia-Slavonia.—In the 1902 annual report of the Chamber of Commerce and Industry in Zagreb (Agram) it is stated that through the efficient action of the Croatian Commercial Company, Limited, in that city, representing the Royal Hungarian Commercial Museum of Budapest, 2,500,000 crowns' ($507,500) worth of Hungarian manufactures, principally textiles, dress goods, ironware, and agricultural machines and implements (particularly dairy machinery) were imported. The attention of American exporters is called to the opening for these goods and the importance of keeping up direct representation in the port of Fiume, if not also in Zagreb.—*Frank Dyer Chester*, *Consul*, *Budapest*, *Hungary*, *July 17*, *1903*.

Iron Trust in Austria.—At the close of the year 1902 the iron industry was in a materially changed condition as compared with the year 1901. The attempt made in 1901 to put the home market on a sounder footing had failed, and reckless competition of the disorganized industry depressed values to such a low level that most establishments must have worked at a loss. Since then the position of this industry has undergone a complete change. The bitter struggle of competition led eventually to a renewed coalition of the iron works in Austria, and an iron trust has been formed, to continue for a period of ten years, which, though it may not be free from fault, is considered unique with regard to the completeness of its organization, being based upon much broader lines than the previous iron syndicate.—*Ethelbert Watts*, *Consul*, *Prague*, *Austria*, *July 22*, *1903*.

Bohemian Porcelain and Glassware.—The porcelain and glass industries are among the most important in Bohemia, but there are no statistics respecting their output and general export. The export to the United States, however, is very considerable. There are in Bohemia 43 factories manufacturing porcelain and china in different varieties and qualities, employing together about 7,000 workmen—from the most skillful artist for decorations down to the common laborer. There are also about 100 glass works, employing about 12,000 workmen and varying largely in class of work. The Bohemian glass is too well known in the world to require any special mention. I am informed that both these industries are in a fairly prosperous condition, with normal demand for their output. Most of the principal porcelain works are in the neighborhood of Carlsbad, where there are also several glass factories. Several important glass works are found near Haida, but perhaps the oldest and finest glass establishment in Bohemia is that known as the Gräflich Harrachsche Glasfabrik, at Neuwelt, where the rarest and most beautiful glass is made both for ornamental and domestic use.—*Ethelbert Watts, Consul, Prague, Austria, July 22, 1903.*

Deposits in the Banks of Prague.—The cash deposits in the banks of Prague on May 31, 1903, were as follows:

Bank.	Deposits.	
	Crowns.	
Böhmische Landesbank	70,140,000	$14,238,420
Böhmische Landesbank on loans	41,450,000	8,414,350
Böhmische Escomptebank	44,700,000	9,074,100
Zivnostenská banka	43,920,000	8,115,760
Böhmische Unionbank	28,830,000	5,852,490
Centralbank der Deutschen Sparkassen	16,170,000	3,282,510
Landwirtschaftliche Kreditbank	11,310,000	2,295,930
Prager Kreditbank	18,520,000	3,759,560
Böhmische Industrialbank	11,770,000	2,989,310
Total	286,810,000	58,822,430

According to late statistical returns, Prague has now a population of 423,990 inhabitants.—*Ethelbert Watts, Consul, Prague, Austria, July 22, 1903.*

The Kingdom of Bohemia.—The Kingdom of Bohemia, in the Austro-Hungarian Empire, has 6,422,738 inhabitants, of whom 3,853,643 are Czechs and 2,569,095 Germans. The Czechs occupy the central and eastern part of the Kingdom and the Germans the western and southern part. Both occupy the large cities and considerable rivalry and antagonism exists between them. The Kingdom covers an area of 51,967 square kilometers (20,059 square miles). The climate is similar to that of our Middle States, without their great extremes of heat and cold. Bohemia is the most fertile portion of the Empire, and its people rank high for steadiness and industry. The products of the field and manufactures, owing to abundance of cheap coal and timber, are most extensive and important. Prague, the capital of the Kingdom, is one of the most interesting cities in Europe. Its present population, according to information given me by its bureau of statistics, numbers 423,990, including the suburbs. Prague contains two universities, one German and the other Czech, and two technical high schools, one German and the other Czech, as well as numerous other educational institutions. Its Conservatory of Music has a very high reputation and attracts thereto many foreigners of both sexes, among whom are many Americans, for the study of the violin, especially, under the now famous Professor Seveik (Sheftshick), the instructor of Kubelik, Kocian, and other great violinists.—*Ethelbert Watts, Consul, Prague, Austria, July 22, 1903.*

Shipping Goods from Bohemia to the United States.—The most favorable routes for shipping goods from Bohemia to the United States are by the way of Hamburg and Bremen. Both these ports are connected with the city of Prague by railways and navigable rivers. The distance from Prague to Hamburg is 661 kilometers (413 miles). The rates of freight by rail from Prague to Hamburg for some of the principal articles of export per 220 pounds, based upon a minimum quantity of 10 tons, are as follows:

Article.	Freight rate.	Article.	Freight rate.
	Cents.		*Cents.*
Wool	78	Copper	62
Grain	51	Paper	99
Wood	51	Spirits	80
Ores	42	Sugar	43
Raw iron	40	Potash	70

Rates of freight by water from Laube (frontier of Bohemia) to Hamburg, per 220 pounds, are:

Article.	Freight rate.	Article.	Freight rate.
	Cents.		*Cents.*
Paper	15 to 17	Porcelain	19 to 24
Mill	11 to 14	Ironware	15 to 17
Graphite	11 to 12	Cellulose	14 to 15
Chamotte stones	12 to 14	Sugar	12 to 14
Blown glass	30 to 35		

These rates fluctuate according to the state of the water. River navigation is closed in the winter, say from about the end of November to the end of February or beginning of March.—*Ethelbert Watts, Consul, Prague, Austria, July 22, 1903.*

Rubber Tires for Vehicles.—A prominent firm of vehicle manufacturers in Copenhagen wishes to correspond with a reliable firm in the United States with a view to purchasing rubber tires for use in the manufacture of vehicles. Very few rubber-tire vehicles are in use in Denmark at present, and the demand for this class of goods is not great. There is a growing demand, however, and the trade is likely to develope very satisfactorily. Letters forwarded to this office in reply to the above request will be promptly delivered.—*Raymond R. Frazier, Consul, Copenhagen, Denmark, August 11, 1903.*

Trucks for Electric and Steam Railway Cars.—A well-known firm of agents in Copenhagen desires to correspond with a firm in the United States who is in position to furnish trucks for street cars and steam cars in a country foreign to both Denmark and the United States, where the government will undertake the construction of new lines of railway, electric and steam. Trucks for passenger cars will be required for the electric lines and trucks for passenger and freight cars for the steam railways. Letters forwarded to this office in reply to the above request will be promptly delivered.—*Raymond R. Frazier, Consul, Copenhagen, Denmark, August 11, 1903.*

American Locomotives for France.—Consular Agent C. J. King, of Lille, France, in reporting, July 22, 1903, on the depressed condition of the industries of his district, brought about, according to the Lille Chamber of Commerce, by conditions in the United States and the threatened changes in the customs of Germany and Switzerland, says that much local capital is being invested in foreign securities and that, while the local machine and locomotive industry has been anything but prosperous, the railway companies have given many large orders for American locomotives. In the face of such conditions the agent considers it rather strange that Porto Rico should continue to draw the greater proportion of its machines and locomotives from Lille.

Dunkirk-American Trade.—It is to be regretted that no regular steamship line exists between Dunkirk and New York. In consequence of the irregular sailing of the boats of the Barber Line, many goods are forwarded via Leith and other transshipment ports. I am strongly inclined to believe that there would be a chance for a well-developed Dunkirk-American trade if a steamship line were established with guaranteed regular sailings.—*Benjamin Morel, Consular Agent, Dunkirk, France, July 20, 1903.*

French Skilled Workmen for the United States.—The usual number of buyers for the American market of Roubaix during the past year made purchases in amazons, zebelines, voiles, and novelties in wool and wool and silk. Manufacturers seemed desirous of selling, even at small profits, in order to give employment to their workmen, who might otherwise seek other fields of activity. Nearly 2,000 skilled hands have left Roubaix-Tourcoing for the United States during the past year. Many of these are now employed in factories established in the United States by manufacturers from this district.—*W. P. Atwell, Consul, Roubaix, France, July 22, 1903.*

French Colonial Cotton Production.—The Government and industrial circles of France take a lively interest in the movement now going on in that country for promoting the cultivation of cotton in the colonial dependencies of France. According to the opinion of experts, Madagascar, the French possessions in Indo-China, and the French Sudan offer excellent conditions in soil and climate for the growth of cotton. The French colonies along the west coast of Africa are also suitable for the cultivation of the plant. France annually manufactures about 213,000,000 kilograms (469,579,800 pounds) of cotton textiles, and therefore the production of the staple is becoming a matter of important concern to French interests, especially as there is a growing tendency to the belief that the countries growing the staple will control the textile manufactures of the future.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 6, 1903.*

Increased French Duty on American Meats.—An amendment to the French tariff law was passed by both houses of Parliament on July 3, whereby, among other changes of importance to American trade, salted meats—including pork, ham, and bacon—previously dutiable at the rate of 25 francs per 100 kilograms ($4.82 per 220 pounds) under both the general and minimum schedules, have been made dutiable at the rate of 50 francs ($9.65) under the general and 30 francs ($5.79) under the minimum schedule. The law has not yet been promulgated by the ministerial authorities. It is scarcely necessary to say that the application of a duty of 50 francs per 100 kilograms ($9 65 per 220 pounds) to meats imported from the United States will make it impossible to carry on this business. Inasmuch as goods from the United States are uniformly dutiable under the French general tariff (with the very few exceptions covered by the reciprocity treaty of 1898), it is probable that this general tariff will be applied in this case. Every important commercial nation, except the United States, obtains the benefit of the minimum tariff rates of France.—*Robert P. Skinner, Consul-General, Marseilles, France, July 13, 1903.*

French vs. German Collieries.—It is reported that the collieries of the Gard Basin are seriously menaced by the constantly growing foreign competition. It is generally assumed in France that there is not sufficient coal in the country to satisfy the demand, although extensive deposits of excellent coal were discovered at Grand Combe, in the Gard Basin, years ago. The collieries are provided with the latest American and German drilling, cutting, washing, and briquetting machinery, and as recently as on June 5 firing tests carried out on the steamer *Berry* with Grand Combe coal showed that 58 kilograms (128 pounds) less coal were consumed in a given test than with the best Cardiff coal. The miners of the region are second to none in seriousness and industry. Finally, the collieries are near Marseilles and have, therefore, a splendid outlet to the Mediterranean. Still, in spite of these enormous resources of coal and other advantages, the imports of foreign coal into Marseilles increased during the last ten years from 400,000 tons to 1,000,000 tons, while the deliveries of Gard coal to the same port decreased in the same period from 400,000 tons to 200,000 tons. Encouraged by a successful trial made last year, the German collieries intend to supply Marseilles. This new competitor is likely to secure from one of the principal railway companies a contract for 50,000 tons of coal.—*Oliver J. D. Hughes, Consul-General, Coburg, Germany, July 30, 1903.*

American vs. German Jewelry.—The Frankfurter Zeitung of July 11, 1903, contains an article on the relative merits of German and American jewelry and the necessity for closing German factories to American visitors. The article is dated Pforzheim, July 7, and states that while the United States is almost closed to the German jewelry industry on account of the high duty of 60 per cent ad valorem, North American competition has for years been trying, partly unsuccessfully, to meet German competition in exports to Central and South America, and that lately a North American jewelry company established a wholesale store in Germany which met with poor success on account of its American patterns; that it is now trying to acquire patterns of German articles. It is feared that the agents of the company will endeavor to gain access to the factories, under one pretext or another, as was done once before with reference to other specialties in order to learn the methods of work, without which the knowledge of the patterns is of little value. The Creditor Society, therefore, publicly gives warning in the local press against making foreign visitors acquainted with the methods of local factories without further investigation.—*Richard Guenther, Consul-General, Frankfort, Germany, July 12, 1903.*

American Dress-Goods Styles in Germany.—As shown in my annual returns of exports declared at Glauchau for the United States during the fiscal year ended June 30, 1903, dress goods show an increase of $85,563 over the exports declared during the preceding year, a remarkable showing when it is remembered that only 4,000 persons were employed in the textile industry here from October 10, 1902, to January 11, 1903 (on account of a strike). In former years designs in dress goods were created here, but during the last few years quite a change in this respect has taken place, the manufacturers in this district now copying very largely from designs and patterns sent hither from the United States, the result being that instead of creating and leading they are following. I again desire to express the opinion that if American manufacturers will execute orders for small lots, as is the custom here, future annual returns from this district will show decided decreases in textile exports to the United States.—*E. A. Creevey, Consul, Glauchau, Germany, July 17, 1903.*

Meat-Inspection Decision in Germany.—It having been held by meat importers, and even by some of the meat inspectors, in view of the rigid inspection to which meats were subjected in Germany, that meat imported from the United States did not require the official certification of the American inspectors that pork had been subjected to microscopical examination and found to be "wholesome," the Imperial Chancellor of Germany has just delivered an opinion on this subject, declaring the new German inspection law did not abrogate the imperial decree of September 3, 1891, which demands the production of the above-mentioned official American certification for hogs, pork, and sausages of American origin. This stipulation remains in full force as long as the decree is not rescinded.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 1, 1903.*

Population of the German Empire.—The latest statistical estimates for the German Empire place the population on July 1, 1903, at 58,549,000, against 57,708,000 and 56,862,000 on July 1, 1902 and 1901, respectively. From these figures it appears that the population has increased 841,000, or 1.46 per cent, in the last year, while the increase of 1902 over 1901 was 846,000, or 1.49 per cent. The census of December 1, 1900, showed a population of 56,317,178. Thus, according to official estimates, the increase in two and one-half years is 2,180,000. In the last ten years the population has increased 7,800,000; in the last twenty years, 12,500,000; and since the formation of the German Empire, 17,500,000.—*Richard Guenther, Consul-General, Frankfort, Germany, July 14, 1903.*

German Textile Mills in the United States.—Several manufacturers in the Glauchau district are considering the advisability of establishing branch factories in the United States. A prominent manufacturer in Meerane has already established such branch factory, and is now opening 150 looms at Garfield, N. J., and a Gorlitz manufacturer is building an extensive plant at Norwalk, Conn.—*E. A. Creevey, Consul, Glauchau, Germany, July 17, 1903.*

German Coke for Mexico.—It is reported that the steel works at Monterey, Mexico, has just made a contract with a Westphalian company for the delivery of 50,000 tons of coke. To some this may perhaps seem extraordinary, considering the close proximity of the American coke ovens. Mexico imported quite a lot of coal from Mobile, Ala., during the year 1901, but the importation was cut short because of the faulty transportation facilities. The exportation of Alabama coal is increasing as rapidly as the transportation thereof will allow. It is even more surprising that about 40,000 or 50,000 tons of coke are annually imported into California from England and Germany, when Washington State has some of the finest coking coal beds in the world.—*Brainard H. Warner, jr., Consul, Leipzig, Germany, July 29, 1903.*

German-Russian Commercial Treaty.—The German Government has sent delegates to St. Petersburg to open negotiations for the enacting of a new commercial treaty with Russia. Russia is a very important field for Germany's exports, and no efforts will be spared by this Empire to conclude a treaty with Russia. This treaty will form the basis for treaties with other foreign countries.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 6, 1903.*

Machine Tools in Germany.—During the first six months of the present year Germany exported machine tools aggregating 9,700 tons (of 2,204 pounds) and imported in the same period 1,053 tons, the latter coming principally from the United States. The markets for German-made machine tools are mainly Russia, Austria-Hungary, Italy, Belgium, and France.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 5, 1903.*

German vs. American Labor Conditions.—A German economist, Professor Jastrow, has written an essay in which he deprecates the existing feeling of fear of and dependency on the American banking and industrial market by the investing, commercial, and manufacturing circles of Germany, which, says the professor, gives Germany the appearance of being a dependency of the United States. He augurs a bright future for German industries resulting from the amicable relationship existing between German workingmen and their employers, whereas he points to the disastrous consequences threatening American industries from the gigantic strikes and lockouts so frequently occurring in the United States.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 3, 1903.*

Insurance Business in Germany.—According to an official statement issued from the imperial bureau of supervision of insurance companies, covering the year 1901, there were 418 German and 76 foreign companies doing business in that year in Germany. Of the whole, 355 were life-insurance companies, the balance being composed of companies insuring against loss by fire, water, storms, accidents, robberies, etc. The premiums received by the several companies during the year were as follows: Life, 363,250,000 marks ($86,453,350); fire and water, 165,300,000 marks ($39,341,400); accident and guaranty, 49,333,000 marks ($11,741,254); hailstorms, 23,750,000 marks ($5,652,500); cattle, 8,750,000 marks ($2,082,500); miscellaneous, 5,000,000 marks ($1,190,000). The German companies participated in these receipts to the amount of 559,125,000 marks ($133,071,750), leaving to the foreign companies 56,258,000 marks ($13,389,404).—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 12, 1903.*

Advance in Prices of German Rubber Goods.—Following the example of Austria, the German manufacturers of rubber goods have decided in favor of a general advance in the prices of all kinds of rubber goods to take effect on and after July 1, 1903. This action is attributed to the prevailing high prices of raw materials, and especially as regards those of cotton, silk, and india rubber.—*Brainard H. Warner, jr., Consul, Leipzig, Germany, July 2, 1903.*

German Iron and Steel in England.—During the year 1902 the imports of iron, steel, and machinery into Great Britain amounted to £2,504,808 ($12,190,148) in excess of those of the preceding year. Commenting thereon, the British Iron Trade Association points to the remarkable activity of German iron and steel manufacturers in the distribution of their products in Great Britain, while American manufacturers are becoming lethargic competitors. The report expresses the opinion that Germany's exports of iron and steel manufactures will in a short time equal those of Great Britain.—*Simon W. Hanauer, Deputy Consul-General; Frankfort, Germany, July 23, 1903.*

Foreign Trade of Germany.—The following table gives the value of Germany's foreign trade for the past five years:

Year.	Imports.	Exports.
1898	$1,294,720,000	$954,618,000
1899	1,376,592,000	1,039,584,000
1900	1,438,234,000	1,131,214,000
1901	1,358,980,000	1,074,094,000
1902	1,359,456,000	1,191,666,000

In the foreign trade of Germany the imports of raw materials has increased, while the exports show an increase of manufactured wares. Of Germany's commercial relations with foreign countries, those with the United States rank first in importance, due to the steady and continued development of the latter—greatly to the benefit of German industries. Germany's exports to the United States increased from $99,616,732 in 1901 to $114,495,502 in 1902.—*Walter Schumann, Consul, Mainz, Germany, July 13, 1903.*

Germany's Foreign Commerce during First Half of 1903.—Consul-General Richard Guenther writes from Frankfort, Germany, July 25, 1903, that, according to the imperial statistical office, the foreign commerce of Germany for the first six months of 1903 was as follows, compared with that of the same period for the two preceding years:

Year.	Imports.			Exports.		
	Quantity.	Value.		Quantity.	Value.	
	Metric tons.	*Marks.*		*Metric tons.*	*Marks.*	
1903	21,723,916	3,068,308,000	$730,257,304	18,303,199	2,410,354,000	$573,664,252
1902	19,661,309	2,839,119,000	675,710,322	15,789,131	2,223,459,000	529,183,242
1901	20,768,599	2,751,987,000	655,072,906	15,048,869	2,136,020,000	508,372,760

New Fire Extinguisher.—Yesterday afternoon, in the presence of a large number of interested persons, another fire-extinguishing device was tested in the Hohenzollern Platz, the new apparatus being known as the "Minimax." A frame booth soaked with petroleum and tar and also a mass of tar poured upon the ground were set on fire, and within a minute the flames were extinguished completely by the apparatus. The apparatus can be used at a moment's notice. It has the form of a large sprinkler made of steel plate. The emptying of the contents is effected by striking a button fixed upon the large flat base of the apparatus. The agent for the Minimax fire extinguisher is Mr. J. Bischoff, Eschersheimer Landstrasse 21, Frankfort-on-the-Main.—*George H. Murphy, Consular Clerk, Frankfort, Germany, August 5, 1903.*

New Brochéing Apparatus.—An apparatus for brochéing has been invented by Mr. C. F. Forbes, of this city (Glauchau), about which I will report at more length when I have had an opportunity of seeing it in operation, it being yet in the experimental stage. The mechanical principles involved are so simple that it is a question of a short time when it will be perfected and become an important factor in the manufacture of this class of goods and effect a saving of at least 20 per cent in broché yarns.—*E. A. Creevey, Consul, Glauchau, Germany, July 17, 1903.*

New Dental Gutta-Percha.—In order to obtain in a single preparation the combined properties of gutta-percha and cement, a German, Dr. Emil Herbst, has devised the following method: A given quantity of cement powder is mixed thoroughly with an equal amount of base-plate gutta-percha filings, and into the resulting mixture a small amount of cement liquid is incorporated. This paste becomes thoroughly hard and can be advantageously used in setting crowns and bridges. It becomes soft and malleable when heated, and therefore a bridge set with it can be easily removed. Incidentally, he refers to another method of obtaining a gutta-percha and cement compound, which consists in mixing together equal quantities of cement paste and gutta-percha solution. This combination makes a preparation which easily adheres to the walls of the tooth and becomes slightly soft upon being heated. Dr. Herbst offers these methods as mere suggestions on the possibilities of mixing cement with gutta-percha with the object of obtaining a material possessing the advantages of both, and he says that the results obtained in the few cases in which he has tried the combination would warrant its further trial by the profession.—*Oliver J. D. Hughes, Consul-General, Coburg, Germany, August 7, 1903.*

German Pianos in Furniture Warerooms.—The export bureau of the German Export Bank, at Berlin, advises German manufacturers of pianos to seek agencies for the sale of their instruments among the leading furniture dealers in transoceanic countries, who, the bureau declares, have facilities to display and sell pianos.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 5, 1903.*

Porcelain Pipes for Waterworks.—The Meissen China Factory, in Saxony, is making water pipes for waterworks which, on account of the various advantages they have over iron and stone pipes, seem to be a promising article, although they are more expensive than the latter. These pipes are very thin and glazed, and are embedded in iron pipes, the space between the two substances being filled up with cement. China being the best resisting pipe material that we know of, every guaranty is given for an unlimited life of the pipes; moreover, the absorbing of iron in the water, which is very frequent when iron pipes alone are used, is made altogether impossible. Furthermore, the iron pipes by having particles of iron absorbed by the water will corrode in the course of time, forming hydrated oxides of iron (Eisenoxydhydrate), which will stop up the tubes and finish by eating holes in the pipes. So far this drawback to iron water pipes has not been very frequently noticed, but it is very likely that we will hear more frequent complaints about them when time draws on and the pipes now in use become older. China pipes, with the average diameter of ordinary water pipes, will cost about 3,000 marks ($714) per mile; if produced in large quantities their price could probably be reduced a good deal. Any way, they seem to be worthy of trial.—*Oliver J. D. Hughes, Consul-General, Coburg, Germany, August 13, 1903.*

Foreign Students at German Universities.—Of the 37,813 students who are at present matriculated at the 21 German universities, 35,082 are Germans and 2,731 foreigners, the latter being 7.2 per cent of the total number. Of these foreigners 2,299 belong to European and 432 to non-European countries. Russia is represented by 860; Austria-Hungary, 536; Switzerland, 253; Great Britain, 149; Bulgaria, 67; Roumania, 63; Greece, 56; Italy, 45; Netherlands and Servia, 45 each; France, 44; Turkey, 36; Sweden and Norway, 32; Luxemburg, 27; Belgium, 14; Spain, 11; Denmark, 10; Portugal, 3; Montenegro, 2; Lichtenstein, 1; America, 276; Asia (mostly from Japan), 133; Africa, 19; and Australia, 5. Of the foreigners, 628 study philosophy, 616 medicine, 588 mathematics and natural sciences, 351 law, 199 forestry, 146 agriculture, 124 Evangelical and 23 Catholic theology, 29 pharmacy, and 27 dentistry; 876 are matriculated at Berlin, 406 at Leipzig, 257 at Munich, 197 at Heidelberg, 146 at

Halle, 128 at Freiburg, 99 at Goettingen, 79 at Jena, 75 at Königsberg, 67 at Bonn, 66 at Strassburg, 54 at Würzburg, 53 at Giessen, 51 at Marburg, 41 at Breslau, 37 at Greifswald, 30 at Tuebingen, 25 at Erlangen, 17 at Kiel, 14 at Rostock, and 13 at Münster.—*Richard Guenther, Consul-General Frankfort, Germany, July 30, 1903.*

Street Sprinkling.—In a report from Consul Brainard H. Warner, of Leipzig, Germany, July 15, 1903, covering the paving, cleaning, and sprinkling of the streets of that city, which report is filed for reference in the Bureau of Statistics, Department of Commerce and Labor, he states that, according to the authorities of Paris, wood pavements, for their better preservation, should be sprinkled four times a day, which is done by the Leipzig department.

Iron Exports of Germany.—In 1902 Germany exported 1,000,000 tons of pig iron and partly manufactured iron, at nonpaying rates, more than was exported in 1901. In other words, this export trade was conducted at an actual loss. The Dortmund Chamber of Commerce frankly admits that this increase was effected by sacrificing profits—business being occasionally conducted at a dead loss. According to this authority the ironmasters had to choose between selling at a loss, or at best without realizing any profit, or limiting their output, and the former was considered the least of the evils. The chamber says that a matter of far-reaching importance to the future of this industry is that the German materials, thanks to the methods adopted by German exporters, have gained a footing in markets and consuming centers which previously knew them only by name, and which, now convinced of their superior qualities, have made arrangements for the continuation of their imports, provided prices prove satisfactory.—*Oliver J. D. Hughes, Consul-General, Coburg, Germany, August 7, 1903.*

Automobile and Bicycle Exposition in Leipzig.—The sixth annual international automobile and bicycle exposition will be held under the auspices of the Society of German Bicycle Manufacturers, at the Crystal Palace, Leipzig, from the 15th to the 21st of October next, both inclusive. This year the exposition will not be confined solely to automobiles and bicycles, but sewing machines, typewriters, cash registers, etc., will also be displayed. It is reported that there is already a great demand for floor space at the exposition, detailed information in regard to which may be obtained by writing to the general secretary, Internationaler Markt und Ausstellung von Motorfahrzeugen, etc., Krystall Palast, Leipzig, Germany. Automobiles are not attaining the popularity in central Germany that they are in France, England, and the United States. Indeed, in this city, which has a population of 500,000, one seldom sees an automobile.—*Brainard H. Warner, jr., Consul, Leipzig, Germany, August 6, 1903.*

Preferential Prices to Foreign Buyers.—The German Association for Commercial Treaties publishes a communication to its members in which it inveighs against the policy of the German trusts of selling their products to foreign consumers at slaughter prices while at the same time they exact high prices from domestic purchasers. The published statement of the above-mentioned association declares that in one of the adjoining foreign states quite a new line of trade has been established. It consists in large consignments of iron tubing and heavy cast-iron products received from Germany at points close to the latter's border. These articles are sold at such a large discount below the ruling home rates that they can be resold and reshipped to Germany at a profit, although the German customs duties have to be paid on their entry into Germany. Where German consumers reside not very far from the foreign border they are enabled to import these heavy iron products, pay the return freight and the customs duties on same, and save from $40 to $62 per ton on the price they have to pay by ordering direct from the syndicate (trust) controlling the manufacture and sale of these iron products.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 3, 1903.*

Rhine-Navigation Statistics.—The Government inspector of the navigation of the Rhine within Prussian territory has made a report for 1902 which shows that the total traffic at the ten more important harbors of Oberlahnstein, Coblenz, Cologne, Neuss, Düsseldorf, Uerdingen, Hochfeld-Duisburg, Duisburg, Ruhrort, and Wesel has increased from 8,272,520 tons in 1893 to 14,789,607 tons, or 79 per cent, in 1902. The Rhine fleet at the end of August, 1902, numbered 9,574 vessels, with crews numbering 28,605. Of these, 1,183 are steamers, with an aggregate of 243,499 horsepowers, and 8,391 vessels and barges, with a carrying capacity of 2,853,227 tons. Of the total horsepower of the steamers, 70 per cent belong to Germany, 26 per cent to Holland, and 4 per cent to Belgium and other countries. Of the tonnage of the sailing vessels and barges, 51 per cent belong to Germany, 35 per cent to Holland, and 14 per cent to Belgium, etc.—*Richard Guenther, Consul-General, Frankfort, Germany, August 1, 1903.*

Agricultural and Woodland Statistics of Germany.—According to the latest agricultural census of Germany, taken in 1895, there existed then in the Empire 5,558,317 farming establishments. Of these there were 3,236,367 containing 5 acres or less of land. Of all farming acreage 61.1 per cent was planted in farinaceous cereals—grain, beans, peas, etc. There were 69,393,000 plum trees, 52,332,000 apple trees, 25,116,000 pear trees, and 21,548,000 cherry trees. Statistics for the tobacco culture show that 41,658 acres were planted with tobacco in 1901 in Germany, producing 40,018 metric tons of dried tobacco leaf. In the official count of 1900 the area covered by forests in Germany aggregated 34,989,672 acres, of which 17,443,188 acres belonged to the States and municipalities. These, as also the woodlands of private individuals, are kept in a high state of scientific cultivation, as the preservation of forests is considered to be a matter of great importance for economic and hygienic reasons.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 8, 1903.*

German Freight Cars.—The carrying capacity of the average German freight car is from 10 to 15 metric tons. Recently the Vereinigte Königs und Laurahütte Aktiengesellschaft für Bergbau und Hüttenbetrieb, one of the greatest manufacturing and industrial establishments of the Empire, received an order from the Prussian State railways for 200 freight cars, each of 20 metric tons capacity. The railroad authorities are now discussing whether it will be wise to still further increase the car capacity. While they are busy investigating the subject and gathering statistics relating thereto, it has been decided to have a few cars, each of 30 tons carrying capacity, constructed, in order to make a practical test as well.—*Brainard H. Warner, jr., Consul, Leipzig, Germany, August 6, 1903.*

Mail Matter in Care of Consuls.—Mail matter, such as registered letters, matter of declared value, money orders, and ordinary packages intended by travelers, seamen, etc., to be received by the addressees at the consulate of their country, lacking the words "Zu Haenden des," "abzugeben an," "fuer," and "unter" (per) "adresse des," as well as the words "aux soins de" (care of) and "pour remittre à," will, according to the post-office regulations, be delivered to the consul-general, consul, or other qualified official representative. The omission of these words is considered to occur through ignorance of the post-office regulations or to oversight on the part of the senders, and the Federal Post-Office Department of Germany has therefore decided that in cases where in addition to the name of the addressee only the name of the consulate is added, without any of the above-mentioned words, the mail matter shall be delivered to the consular officer without further formalities other than the customary receipt by him.—*Richard Guenther, Consul-General, Frankfort, Germany, August 1, 1903.*

German Bristle Trade.—The summer bristle sale may be said to have closed last week. There were large quantities of bristles bought outright and many orders were placed for future delivery. The buyers who purchased in largest quantities were from England, France, and the United States. About the usual quantity was bought by German dealers. The prices still remain high for all kinds and qualities; even the soft grades of bristles were greatly in demand. The prospects are that bristle dealers will have another very satisfactory year. The next bristle sale will take place in Leipzig, in September, 1903, beginning on the 13th of the month.—*Brainard H. Warner, jr., Consul, Leipzig, Germany, July 20, 1903.*

Reduction of German Cable Rates to the Orient.—The Imperial German Post and Telegraph Department recently issued an order reducing the cable rates for messages to China, Japan, Korea, Manchuria, and the Philippines on and after July 15, 1903. It now costs to send messages to the following countries, per word not exceeding fifteen letters:

To China, Manchuria excepted	$1.08
To Korea:	
Chemulpo, Fusan, and Seoul	1.21
Other places	1.29
To Japan	1.21
To the Philippines:	
Luzon	1.08
Panay, Cebu, and other stations	1.18
To Manchuria	1.08

These rates are for messages via Emden, Vigo, Vladivostock, and Nagasaki. It is further announced by the postal authorities that after July 15, 1903, the use of cable codes may again be resumed in sending messages to Spain. Cablegrams for Honduras, Venezuela, Nicaragua, Costa Rica, and Colombia will only be sent at the sender's risk.—*Brainard H. Warner, jr., Consul, Leipzig, Germany, July 21, 1903.*

Cost of German Public Elementary Schools.—The cost of public elementary schools of the German Empire is 415,198,000 marks ($98,817,124) per year. Of this sum the States contribute 120,357,000 ($28,644,966). The cost of the public elementary schools of the different German States is smallest in the principality of Schaumburg-Lippe, with 213,000 marks ($50,694), the State contributing 34,000 marks ($8,092). In the principality of Waldeck the total cost is 359,000 marks ($85,442), of which the State pays 107,000 marks ($25,466). Bavaria expends 39,800,000 marks ($9,472,400), the share of the State being 14,200,000 marks ($3,379,600); Saxony, 34,300,000 marks ($8,163,400), the State paying of this sum 4,800,000 marks ($1,142,400); Wurttemberg, 12,300,000 marks ($2,927,400), of which the State pays 3,800,000 marks ($904,400); Baden, 11,000,000 marks ($2,618,000), the State's share being 2,400,000 marks ($571,200). In Prussia the State contributed 73,066,000 marks ($17,389,708), the total cost being 269,917,000 marks ($64,240,246). The share of the States of the whole German Empire for the support of the public elementary schools was 28.98 per cent; in the Kingdom of Prussia the State contributed 27.6 per cent; in the eastern provinces of Prussia, between 40 and 50 per cent; in the western provinces, only a little over 20 per cent; and in the capital, Berlin, only 2.39 per cent.—*Richard Guenther, Consul-General, Frankfort, Germany, July 22, 1903.*

Regulating Unfair Competition in Germany.—The committee on trade and commerce of the German Bundesrath has for some time been at work framing a bill to make laws which will further tend to prevent unfair competition. The material and data which it has in hand were furnished by tradesmen and merchants from all parts of the Empire. It is expected that the draft of the bill will soon be made public. It is said that under the new laws the "closing-out-sale business" will be prohibited.—*Brainard H. Warner, jr., Consul, Leipzig, Germany, July 20, 1903.*

Prices of German Yarns and Thread.—At a meeting of the German cotton spinners, held at Gladbach on July 10, 1903, it was decided to immediately reduce the price of cotton yarns 0.00216 cent per pound. Many spinning mills have curtailed their output, hoping in this way to avoid the necessity for any further reduction of prices. At a meeting of the German thread manufacturers, held at Dresden on June 29, it was decided that on and after July 1, 1903, the prices of all threads should be advanced 10 per cent. The reason given for this advance was the high price of cotton.—*Brainard H. Warner, jr., Consul, Leipzig, Germany, July 20 and 21, 1903.*

Practical Medicine in Germany.—It is reported that the city of Düsseldorf will soon have the first academy for practical medicine in Germany, and it will be in connection with the new hospital to be erected. As director of the academy, the Kultus Ministry has proposed the name of Professor Witzel, of the University of Bonn; other professors of Bonn are expected to be called to the academy. The Kultus Ministry has also the establishment of more such academies under consideration. The one at Düsseldorf is for the Rhine Provinces and Westphalia. Frankfort is to have one for southern Germany, Breslau for eastern Germany, Magdeburg or Halle for middle Germany, and Berlin for northern Germany. While the academy at Düsseldorf has been definitely agreed upon, the others are only under consideration.—*Richard Guenther, Consul-General, Frankfort, Germany, July 22, 1903.*

Petroleum in Greece.—Minister J. B. Jackson reports from Athens, Greece, July 16, 1903, that he is authoritatively informed that the future of the trade in American petroleum in Greece is not in danger, as no other country can compete with the United States either in quality or price. Efforts are being made to induce the Government to obtain its supply from other than American sources. It has long been known, continues the minister, that naphtha is to be found in the island of Zante, but past investigations have not led to a belief that the fields could be worked profitably. An English company has now the intention to go into the matter seriously and has been negotiating with the Government to that end.

Technical Schools in Russia.—The German papers state that the Russian Government will incorporate in its next appropriation bill a much larger sum for the support of technical schools than heretofore. The branches of instruction in machine building and electrical mechanics are to be especially favored.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, July 23, 1903.*

Urging Lower Duties on Cotton and Cotton Yarns in Russia.—Manufacturing and exporting circles in Russia urge the Government to reduce the import duties on cotton and cotton yarns in order to enhance domestic consumption of cotton goods and to increase the exportation of same to Asiatic countries which now are mainly supplied by England, the United States, Japan, and other industrial countries.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, July 23, 1903.*

Chinese Warehouses in Russia.—The results of the excursion of Chinese merchants to European Russia, mentioned in a former report from this commercial agency, is seen in the determination to open warehouses for Chinese products at St. Petersburg and Moscow. They will bring their native commercial agents and business staffs along. The shops will be built in Chinese style. From St. Petersburg and Moscow branch establishments are proposed at Warsaw, Wilna, Helsingfórs, Riga, Kief, and Odessa.—*Richard T. Greener*, *Commercial Agent*, *Vladivostock*, *Siberia*, *May 28*, *1903*.

Emigration from Finland to the United States.—In his annual report, dated July 20, 1903, on the foreign commerce of Finland for the year 1902, Acting Consul Victor Ek, of Helsingfórs, Finland, says that in the seventies, in East Finland, with its more active inhabitants, an inclination to emigrate manifested itself, although the emigration then was not of any particular extent. The beginning of the eighties shows a sudden increase in emigration, wherein a good many young men, 20 years and thereabouts, were represented. From this it was presumable that fears of being called into active military service was the chief motive for their leaving the country, but as soon as experience was gained and people got accustomed to the law the fears were dispersed, and in 1884 the number of emigrants went down to a minimum. It rose again in the years 1892 and 1893, in consequence of a failure of the crops, but from the year 1899 a new wave, higher than ever before, was rising. The emigration since then was as follows: In 1899, 12,537; in 1900, 10,397; in 1901, 1,256; and in 1902, 22,000.

Siberian Butter Trade.—In February there was a convention at Tomsk of those engaged in the butter business in western Siberia. The main point discussed was the method of extending the butter export to Dalny, Port Arthur, and the ports of China. Mr. Sakharoff, representative of the Chinese Eastern Railway, stated that there was a strong and constant demand for Siberian butter in East Asia and China. This demand would certainly increase, and steps must be taken to meet the demand. Hitherto Australian butter had been popular in the Far East, but a series of dry seasons had nearly stopped this export. Siberians must avail themselves of this opportunity and supply the deficiency. The ruling prices in eastern markets were very favorable. Vladivostock consumes annually about 60,000 poods (2,160,000 pounds) of butter at prices ranging from 20 to 24 rubles per pood (30 to 34 cents per pound) and upward. Should prices be lowered and the quality retained, the western Siberian exporters could easily count on a consumption of 300,000 poods (10,833,600 pounds) each year. At Harbin one firm sells at the present time 100,000 poods (3,611,200 pounds). The main thing is for the Chinese Eastern Railway to furnish facilities for the proper transportation of butter to the East, as is already done in the westward transportation. Mr. Sakharoff promised in behalf of the railroad that these facilities would be made—two butter cars (daily) and ice houses at several important stations. While the western traders look with interest to the expansion of their business, the rising butter industry of eastern Siberia will more likely receive the greater advantage from the shorter distance and cheaper freights.—*Richard T. Greener*, *Commercial Agent*, *Vladivostock*, *Siberia*, *May 25*, *1903*.

American-Spanish Trade.—In his annual report showing the trade and industries of Carthagena for the fiscal year ended June 30, 1903 (filed for publication in Commercial Relations), Consul Joseph Bowron, of Carthagena, Spain, thus treats of American-Spanish trade:

Letters, circulars, and catalogues are plentiful, but they will not create business until Americans are prepared to quote cost, freight, and insurance to Spanish ports, on the basis of English or French money, and give respectable customers such ordinary commercial credits as they can obtain readily from European shippers.

The enhanced cost of American goods, due to the absence of direct steam communication between United States and Spanish ports, has been referred to in previous reports. In this connection I may say that bread is essentially the staple of life throughout Spain, and that in this consular district the bulk of the bread is made from flour which is brought hundred of miles from Catalonia and the north. With a treaty of commerce and direct steam communication, I have no doubt that American flour could win and hold this market.

American Trade Opportunities in Southern Spain.—Consular Agent Walter Saberton, of Seville, Spain, under date of July 30, 1903, makes the following report:

A great opening exists in southern Spain for agricultural labor-saving implements. The farmers are beginning to appreciate modern machinery, but unless American manufacturers send capable representatives and appoint suitable, energetic agents the demand will probably be supplied almost entirely by English goods.

Andalusia abounds in mineral wealth, but comparatively few mines are worked, chiefly owing to the want of capital. I am of opinion that this mining district is well worthy of the attention of American capitalists. A new railway is in course of construction from Cala to Seville, opening up an extensive mining district, and this will have the effect of largely increasing the export of ores from this port.

The principal imports into Seville from the United States during the years 1901 and 1902 were:

Article.	1901.	1902.
Petroleum ....tons...	4,030	4,615
Jute ....do......	27	....
Oak staves........number...	129,000	....
Machinery........tons...	76	15
Tobacco........do......	....	243

Cadiz-American Trade.—Formerly the wine trade of Cadiz was very large, but it has greatly declined since 1900, though exports to the United States have increased during the past twelve months. The principal imports from the United States during the year 1902 were staves, machinery, wheat in small quantity, and flour. There is a growing demand for agricultural machinery and implements, and American manufacturers should send duly qualified representatives into Andalusia to select and appoint energetic local agents. Catalogues are of no account, as Spanish farmers operating on a large scale will not purchase without seeing the goods. Reapers, plows, and implements such as are required in southern California would find ready sale if properly handled, and would meet the requirements of this region.—*R. M. Bartleman, Consul, Cadiz, Spain, July 15, 1903.*

Commercial Museum in Cadiz.—The Chamber of Commerce of Cadiz is about to establish a commercial museum. The Central Government has already donated the sum of 10,000 pesetas ($1,930) toward the expenses of same for the present year. The museum is to be a permanent exhibition of natural and manufactured products, with a bureau of information, divided into three groups, viz: (1) Products of the province; (2) products of the rest of Spain; (3) products of foreign countries.—*R. M. Bartleman, Consul, Cadiz, Spain, July 20, 1903.*

Spanish Iron Pyrites for the United States.—Consular Agent W. J. Alcock, of Huelva, Spain, in his annual report covering the trade and industries of his district for the year 1902, says that iron pyrites is in very great demand for the United States, but as new purchasers require the product f. o. b., and holders or present producers have already made their contracts, it is necessary for new companies to enter into negotiation with holders of unworked properties, of which there are plenty in the Province (Huelva), and thus secure the large quantities still required for the United States.

Swiss Exports of Chocolate and Cocoa.—The exports of chocolate and powdered cocoa from Switzerland during the year 1902 amounted to 5,103 tons (of 2,204 pounds), valued at 15,500,000 francs ($2,991,500), an increase of nearly one-fourth on the exports of 1901. It is remarkable that Switzerland can export these as well as other sweet preparations to countries from which she receives the raw products, for all materials entering thereinto—cocoa, sugar, spices, etc.—are imported. The same is true of the greater portion of the exports of Switzerland. Later on, very probably, the countries producing the raw materials will manufacture and export the finished products.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 5, 1903.*

British Chartered Company for Siberia.—Accounts from London report the organization of the Chartered Company of Siberia, an English enterprise to exploit mining and forest territory in the Altai Mountains and along the Amur River, in Siberia. The new company, which starts with a working capital of £1,250,000 ($6,083,125), has already secured tracts of land aggregating 40,000 square miles from the Russian Government. The company has obtained the privilege of manufacturing explosives and has free use of the water power of the rivers in said section of Siberia.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, July 23, 1903.*

English Coal in Germany.—The following figures, showing the quantity of English coal imported into Germany through German ports during the first six months of 1901, 1902, and 1903, should be of interest to mine owners and coal dealers in the United States:

Imported via—	1901.	1902.	1903.
	Tons.	*Tons.*	*Tons.*
Baltic ports	1,091,149	1,096,991	1,103,370
North Sea ports	1,191,250	1,179,640	1,323,434
Inland ports	74,581	12,628	17,884
Total	2,356,980	2,289,259	2,444,688

Surely, if England can make such a showing, the United States, with its enormous coal fields, should make an effort to secure a share of this trade.—*Oliver J. D. Hughes, Consul-General, Coburg, Germany, July 24, 1903.*

Pan-British Protective-Tariff Scheme.—Chamberlain's pan-British protective-tariff scheme excites considerable attention, mixed with anxiety, among German manufacturers, exporters, and the newspapers in general. Great Britain and her colonies are the most valuable foreign customers which Germany has, and the latter can not well afford to lose even a part of the present amount of British patronage. German newspapers try to soothe the ruffled feelings of their readers by telling them this pan-British tariff scheme, when put into practical effect, would hurt the export trade of the United States still more than that of Germany; but this is poor consolation, especially as the facts will not bear out the statement. United States exports to Great Britain and her colonies are either raw materials and food stuffs, which we produce cheaper and better than any competing country, or, if articles of manufacture, they are specialties in which we have decided production advantages.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 3, 1903.*

Steam-Propelled Passenger Cars.—Consul Marshal Halstead, of Birmingham, England, under date of August 12, 1903, writes:

At the half-yearly meeting of the directors of the London and Southwestern Railway Company the chairman stated that the working of steam motor cars had been a success.

In his speech, reported in the London Times of August 7, he said:

> In conjunction with the Brighton Company, they had commenced working by steam motor car the line between Fratton Junction, which was near Portsmouth, and Southsea. Their general manager advised them to try what could be done by working this branch with a steam motor car. Not only had a large saving in expenses been effected by the adoption of this method, but an increased traffic had been secured at the same time, owing to the more frequent service which had been given.

Sheffield Exports to the United States.—According to report, dated July 20, 1903, from Consul Church Howe, of Sheffield, England, the exports from Sheffield to the United States during the fiscal year ended June 30, 1903, amounted to $3,053,674, an increase of $514,770 over the exports of the preceding year. For a clearer understanding of this trade, the following comparative statement, showing the principal articles constituting the Sheffield exports to the United States for the fiscal years 1902 and 1903, is given:

Article.	1902.	1903.	Increase.	Decrease.
Steel (sheets, bars, plates, etc.)	$1,827,480	$2,242,564	$415,084	
Cutlery	372,845	411,449	38,604	
Edge tools and razors	35,579	35,138		$441
Sheep and garden shears	56,793	62,265	5,472	
Horn and manufactures of	87,188	71,479		15,709
Pearl and manufactures of	43,771	40,132		3,639
All other articles	115,248	190,647	75,399	
Total	2,538,904	3,053,674	534,559	19,789

This statement shows a net increase of $514,770, of which steel counts for $415,084. The only other increase of importance to Sheffield is that in cutlery. Deducting steel from the Sheffield exports to the United States leaves the export of all other articles $811,110 for the fiscal year 1903.

Argentine Wool Statistics.—The raw wool exported from the Argentine Republic from October 1, 1902, to July 3, 1903, was as follows:

	Bales.
Dunkirk	187,642
Antwerp	56,919
Hamburg	97,181
Bremen	40,093
Genoa	5,446
United Kingdom	28,807
United States	21,623
Bordeaux	119
Havre	7,310
Marseilles	1,167
Rotterdam	2
Total	*446,309

The exports for the season 1901-2 comprised 434,283 bales. The figures for 1901-2 include 17,000 bales of the 1900-1901 clip.—*D. Mayer, Consul, Buenos Ayres, Argentine Republic, July 11, 1903.*

New Import Tax in Brazil.—Consul-General E. Seeger, of Rio de Janeiro, Brazil, under date of July 15, 1903, reports that the Government has levied a harbor tax of 1½ per cent gold (3¾ per cent paper), to take effect on that day. This tax, the consul-general adds, will prove a hardship to the already overburdened import trade of Brazil, especially in view of the general commercial depression. The way in which the principal imports from the United States are affected is shown below:

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* 357,047,200 pounds.

Article.	Increase of duty.	Article.	Increase of duty.
	Per cent.		*Per cent.*
Rice	10.8	Tea	0.7
Beans	7.2	Kerosene	8.6
Corn	4.1	Codfish	2
Wheat	.25	Lard	1.6
Flour	3.7	Grease	2.1
Alfalfa	6.7	Rosin	29
Cotton yarn	3.6	Turpentine	3.4
Potatoes	5.7		

Drawback to American Trade in Colombia.—In his report on agricultural implements in Colombia, which will be published with the series of reports on the subject of "Agricultural machines and vehicles in foreign countries," Consul Colvig, of Barranquilla, Colombia, writes:

In this city (Barranquilla) of 50,000 inhabitants there is not an American merchant or firm engaged in business, the trade being largely in the hands of Germans and other European merchants.

Changes in Costa Rica's Tariff.—By a decree issued July 20, 1903, the following changes were made in Costa Rica's tariff:

Article.	Duty per kilogram.	
	Costa Rican currency.	United States currency.
	Colons.	*Cents.*
Broom corn (for brooms)	0.05	2⅓
Broom handles	.06	2⅘
Fresh vegetables	.25	11⅝
Sulphur of carbon	Free.	

The duty on broom corn will not go into effect until ninety days after publication of the decree. Duties on the other articles will not be assessed on orders placed before the emission of the law.—*John C. Caldwell, Consul, San José, Costa Rica, July 20, 1903.*

Tariff Classification of Ribbons in Venezuela.—The President of the Republic has decreed that tapes or ribbons of linen, cotton, or wool that have india rubber in their textures must be classified, for tariff purposes, with tapes or ribbons which contain no india rubber.—*E. H. Plumacher, Consul, Maracaibo, Venezuela, July 16, 1903.*

Helps to American Trade in Japan.—In his report on the trade and commerce of the consular district of Nagasaki, Japan, for the year 1902, Consul C. B. Harris, of Nagasaki, Japan, suggesting a way to increase American trade, says:

It is greatly to be desired that additional facilities be secured to increase the sale of American products in this Empire. There seems to be now no better or more convenient way to reach that end than for the American cable system, lately landed in the Philippines, to arrange for and extend their system to Japan. It is believed that on the inauguration of direct cable connection with the United States our trade in this Empire will very materially increase.

In the same report, speaking of the Mitsu Bishi Dockyard, Engine, and Shipbuilding Works, Consul Harris says that the company's orders have been and are now, even for American goods, almost wholly placed in Great Britain. There exists no good reason why their purchases should not be made to quite an extent in the United States, provided direct solicitations be made by our manufacturers.

Quinine Auction in Batavia.—The sixth public sale of quinine by tenders for the year 1903 took place at this city on the 24th ultimo, and the following unsatisfactory prices were realized:

There was put up for sale 9,661.08 kilograms (21,253 pounds) of sulphate of quinine, Editio II, packed in cases of 400 ounces, and 240 kilograms (528 pounds), Editios II and III, packing at purchaser's option.

Of the above lot only 2,412 kilograms (5,307 pounds) were sold, at an average price of 14.95 florins ($6.01) per kilogram (2.2 pounds) or the unit price of 0.05225 florin (2.1 cents) for the bark at the Amsterdam market.—*B. S. Rairden, Consul, Batavia, Java, July 6, 1903.*

South African Coal Fields.—Under date of July 14, 1903, Consul W. Stanley Hollis, of Lourenço Marquez, Portuguese East Africa, states that according to the Gold Fields News, Barberton, July 10, 1903, the Komati Poort coal area would be declared open during the month. The boundaries of this field are wide and are roughly as follows: On the north, the Crocodile River; on the south, the Swaziland boundary; on the east, the Portuguese line; and on the west, the limits of the proclaimed area of the Kaap gold fields. Although the extent of the coal deposits is not yet clearly defined, it is believed to be a continuation of the coal belt which proved to be valuable on the borders of German East Africa and the Portuguese territory, and extends southward to Natal and even farther. This contention is borne out by the knowledge that the Swaziland and Zululand outcrops are on the same line of country. As far as yet made public, the deposits at Komati Poort show evidences of three or more distinct geological periods. In one bore hole, opened not so very long ago, the strata pierced were in the following order: Sandstone, shale, coal, a 6-inch seam of shale, then coal again, with shale and sandstone beneath. There the exploration stopped for the time, but the occurrences of the seams certainly are favorable to the belief that an extensive coal field is there, and that only the opportunity which is now to be given by the government has been the cause of the bounties of nature not having been sooner drawn upon in this locality. Certain Delagoa men are keenly alive to the possibilities lying dormant here and the encouragement offered to exploration work in a district so adjacent to a seaport, where facilities for loading coal will shortly be provided on a scale not hitherto seen on this littoral.

Foreign Trade of the Kongo State.—During the year 1902 the trade of the Kongo State amounted to $4,760,000 for goods imported and $13,566,000 for merchandise exported.

Principal participants in the above trade.

Country.	Imports.	Exports.
Belgium	$2,903,600	$11,067,000
Great Britain	618,800	690,200
Germany	214,200	119,000
France	166,600	23,800
Holland	119,000	238,000
Portugal	47,600	119,000

Chief articles of import.

Powder and cartridges	$147,084
Steamboats	108,766
Beer	78,302
Wine	183,974
Provisions and canned food	507,654
Dried fish	152,320
Rice	114,002
Flour	102,102
Ready-made clothing and laundry goods	214,914
Machines, tools, apparatus, etc	177,786
Copper wire	85,680
Notions and fancy small ware	121,618
Cotton textiles	176,358
Printed and colored cotton textiles	855,134
Glassware	90,916

The exports consisted principally of rubber, valued at $9,936,900; ivory, $1,190,000; palm nuts and palm oil, $634,174; and copal, $119,000. The exports of ground nuts and coffee were valued at about $25,000 each.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, July 29, 1903.*

Australian Duties on Margarin and Grand Drills.—The Minister for Trade and Customs of the Commonwealth of Australia has recently made decisions in customs duties by which margarin will be charged the same duty as butter—viz, 3d. (6 cents) per pound—and grand drills, hitherto charged 15 per cent ad valorem as flannelettes, will be admitted under the heading of cotton piece goods at 5 per cent.—*John P. Bray, Consul-General, Melbourne, Australia, June 22, 1903.*

Cremation Statistics.—The number of cremations in the several countries during the year 1902, according to crematory statistics, was as follows: The United States, 3,158; Germany, 856; England, 452; Italy, 322; France, 4,805 (of which 305 were paid for, the others being gratis); Switzerland, 217; Sweden, 66; and Denmark, 44—total, 9,920. The total cremations in the principal cities of Germany are given as follows: Gotha (1878–1902), 2,934; Heidelberg (1891–1902), 1,174; Hamburg (1892–1902), 1,014; Jena (1898–1902), 289; Offenbach (1899–1902), 323; Mannheim (1901–2), 63; Eisenach (1902), 17—total, 5,814.—*Richard Guenther, Consul-General, Frankfort, Germany, July 22, 1903.*

World's Hop Crop.—According to official statistics, the world's hop crop for the years 1902 and 1901 were as follows, in round numbers:

Country.	1902.		1901.	
	Kilograms.	*Pounds.*	*Kilograms.*	*Pounds.*
Austria-Hungary	9,032,000	19,870,400	15,669,900	34,473,780
Germany	24,500,000	53,900,000	12,520,000	27,544,000
France	2,000,000	4,400,000	2,250,000	4,950,000
Belgium and Holland	2,000,000	4,400,000	4,500,000	9,900,000
England	16,500,000	36,300,000	31,500,000	69,300,000
United States	13,000,000	28,600,000	19,000,000	41,800,000
Australasia	500,000	1,100,000	800,000	1,760,000
All other countries	2,168,000	4,769,600	8,760,100	19,272,220
Total	69,700,000	153,340,000	95,000,000	209,000,000

The decrease in the world's crop of 1902 was due, as will be seen by the table, to the diminished crops of England and Austria-Hungary.—*Ethelbert Watts, Consul, Prague, Austria, July 22, 1903.*

FOREIGN REPORTS AND PUBLICATIONS.

Beet and Cane Sugar as Industrial Factors.—In a review of a book on "Sugar Production and Sugar Premiums," by Max Schippel, Das Handels Museum of July 16, 1903, official organ of the Austrian Government, publishes matter of almost universal interest. It says, among other things, that certain neglected fields have been investigated and facts furnished that can not fail to be of interest to all who participate in any way in the production and distribution of beet or cane sugar. Attention is first called to the enormous interest India has in the maintenance of the old, primitive methods of boiling the sugar. The writer then deals with the disastrous catastrophe that has overtaken and almost overwhelmed the sugar plantations of the West Indies. Attention is called to the West Indians' inability to compete with the beet-sugar producers of Europe; also to the difficulties that beset the path of North American sugar producers because of inadequately trained labor. In regard to the results that are expected to follow the aims and efforts of the recent congress of sugar-producing countries held at Brussels for the purpose of finding a way to avoid disastrous competition and premium paying, the paper quotes Schippel as follows:

> In the competition between the former premium-paying countries, the dismantling of the factories of individual participants does not make such a very great difference.

In other words, no very noticeable change has been effected. As far as relatively favorable positions are concerned, Germany, under the arrangement proposed, would come out ahead. The sugar production of its neighbors, particularly France, would lose more than Germany. The separate or special favors granted by the congress to Italy, Sweden, and Spain, says Mr. Schippel, conceal no new danger, but rather some profitable features compared with the present situation. These countries, by staying away from the conference, could have enacted or kept such sugar laws as would ultimately have raised them to the position where they would be able to provide for themselves; Italy is almost at that point. Sweden, with her premiums and protective tariffs, was able, as far back as 1901–2, to get along without sugar imports. Spain, whose sugar supply consists of two-thirds beet sugar and one-third cane sugar, is producing more now than the nation needs. Special care has been given to the beet-root-sugar industry since the colonies were lost. Plans are on foot for reducing the production by effecting a union of some kind of all those interested in the production of sugar. The participation of these states in the conference has led to one good thing, viz, that when they become sugar-exporting states, if they ever do, they will be bound by the treaty or agreement arrived at in the conference (article 6). On the other hand, they are already bound to find compensating measures against the sugar that comes in from premium-paying countries. Thus, so far as they import sugar at present, they must seek their supply, or the largest part of it at least, in the lands bound by the contract. The careful watching of sugar in transit will be of value.

Mr. Schippel says, further, that one needs to have no fear of Russia. She opposes export premiums, in consequence of her system of lawmaking, and claims in all cases, on the basis of the most-favored-nation clause, exemption of her sugar from customs penalties. Still, her position in this respect has been exceedingly unlucky. In 1887–88, at the London conference, Russia joined those, without any reserve, who claimed that compensating duties did not violate the most-favored-nation clauses. Since 1897 the United States treats Russian sugar as a product to which a premium is paid. In 1899 India began to do this. Nowhere has Russia's claims been allowed. Now, if all the other interested parties—England, Germany, Austria-Hungary, her ally France, Belgium, Holland, Spain, Italy, and Sweden—oppose her, is Russia going to remain in opposition? It is easier to think of her joining the convention, or that she would turn to the development of Asiatic markets—India excepted—and to supplying her own home market with its wonderful possibilities of development and expansion.

The reform propositions put forth by Russia about the middle of February, 1903, would indicate a tendency toward the solution just indicated. Mr. Schippel, after careful consideration of the question whether cane sugar is ever again to occupy its old place in the industrial world in comparison with beet-root sugar, replies in the negative. He sees no reason for thinking there is to be any very great change. He points out the possibilities in the sugar industry and claims that the German market is reserved for the factories of the Fatherland. He says its powers of expansion are enormous—so much so that in case of necessity it can be made to take the largest part of what the Empire exports. The present consumption in England, he says, is nearly 98 pounds per capita per annum; in Germany, only 30 pounds. By the time the Germans consume 98 pounds per capita per annum there will be little of the Empire's present sugar production left for exportation.

There were very considerable markets in which the two sugars—cane and beet-root—met, but always to the ultimate disappearance of the former. Witness Louisiana's cane sugar in competition with the beet-root product of the northern section of the United States. No one dreams of ever seeing the cane sugar drive its rival from the field.

Since the introduction of compensating duties the European premium-paid sugar finds itself upon the same plane as the imports of the normally taxed and not specially favored cane-sugar imports. This is true of the East Indies and the results are the same. France tried by means of complicated regulations to help its colonies in producing cane sugar, but to no purpose. The production fell off and the beet-root-sugar industries prospered. The same, with slight modifications, is true of Spain and Holland. Although German sugar got the smallest premium it was able to drive cane sugar from the English markets. Experience goes to show that the fears, long entertained, in regard to beet-root sugar are groundless. Against them are the history of all tropical development. Tropical colonies will never have the intellectual power to expand and to move forward such as characterizes the electrical, almost tireless, movements of Europe. The men to unite the sciences with practical life, the perennial stream of expert farmers, chemists, and technicians, recruited from the middle classes, are impossible in the Tropics, where no such middle class exists. Capital will always have to count on enormous risks in the tropical colonies. These are the devastating forces of nature—various kinds of fevers, the uncertainties that attach to the workings of social institutions, the hostility of races, the failure of all law and order at times. The money needed from the sowing of seed to the harvesting, or from the beginning of an undertaking till the sale of the product, is not to be had and the financial organization for its control is far inferior to that of Europe. The greatest obstacle is found in the inability to properly organize labor. Whether one begins by building up small farms or by running huge plantations—worked by negroes and coolies, who are paid by the day, week, or month—the result will remain always the same. The production will be small and uncertain, as are all labor arrangements based upon the one-sided idea of one man's will. It is true that the tropical colonies have built up a better type of labor since the abolition of slavery. Both capital and labor have been benefited thereby; but, in many cases, hopes based upon these better conditions have been dashed to pieces. It often happens now that such hopes are destroyed. Where, however, they have not failed, but the good work has gone on and the people have persevered, the reward has not been wanting.

Increase in American Silk Manufactures.—M. Jules Huret, who has been studying the industrial and trade relations and conditions of the United States, has reported to the Figaro that whereas the United States had only 86 silk mills in 1870, with a total capital of $5,839,800, it had 500 factories in 1902, with a capital of $97,330,000, an increase in the number of mills of 700 per cent and of capital 1,700 per cent. The value of silk goods manufactured in the United States in 1870 was $11,679,600; in 1902, $121,662,500. And yet, notwithstanding all this, the imports of silk goods from Europe increased from $23,359,200 in 1870 to $29,199,000 in 1902. In 1870 the United States met only a small part of its own demand—about 12 or 13 per cent—buying 87 per cent abroad; to-day it produces 85 per cent at home and buys 15 per cent in foreign parts. Paterson, N. J., will have fully 45,000 looms in operation by the end of 1903.

Future Applications for Radium.—The Anglo-Indian Review summarizes an interesting and illuminating account of the possible future applications of radium. The area where success is practically assured is at present not very large, but in the medical field it is already fairly extensive. In the working of X rays and in the marvellous results achieved in the treatment of cancer and blindness we have every hope for great and universally benefiting results. In its industrial application we are somewhat restricted by the extremely limited supply of radium available, but it is stated that a small fraction of an ounce, properly employed, would probably provide a good light sufficient for several rooms and would not require renewal during the present century. It has been calculated that the energy stored up in 1 gram of radium is sufficient to raise 500 tons weight a mile high. An ounce would, therefore, suffice to drive a 50-horsepower motor car at the rate of 30 miles an hour round the world.

Apples and Cider for England.—Mr. Fred. W. Bennett, of Yatton, Somerset, England, requests the Department of Commerce and Labor to place him in communication with the proper parties in the United States who may desire to open up a large trade in apples and cider. He stands ready to purchase apples for cider making, apples for jam making, and apples pulped ready for jam makers' use up to 5,000 tons, to be delivered in 20-ton lots or otherwise as may be agreed upon, and cider in proportionally large quantities. He stands ready to pay cash against bills of lading upon the arrival of the goods at an English port. Those desirous of communicating with Mr. Bennett are requested to quote lowest price, in English money, per ton (2,240 pounds) net weight of apples, cost, freight, and insurance, delivered at Bristol, at Liverpool, and London, the first port for cider-making apples, and the three last ports for jam boiling apples and pulp. An explanatory circular, issued by Mr. Bennett, is on file in the Bureau of Statistics, where interested parties may examine the same.

England's Iron Supply.—The Handels Museum, Austria's official governmental organ, in its issue of July 9, says:

> The English Government is giving out information obtained from its consuls covering the world's iron-ore supply. The large imports of iron ore into England—about one-third of the total amount consumed—is not due to any fear of the exhaustion of the supply, but to a desire to save the nonphosphorus iron used in the acid process. There is a large, almost unlimited, supply of iron containing phosphorus in Scotland and in the Cleveland and Staffordshire mines. The great anxiety caused by the decrease in the North Spanish supply, particularly in the mines about Bilbao, were somewhat allayed by the discovery of new deposits in the southern parts of the Peninsula; still, the distance of the new mines from the seashore and the high freight rates by sea preclude the possibility of these ever being to England what the mines of Bilbao have been. Great hopes have been placed in the Norwegian mines—those in the polar circle. By a process invented by Edison, these, in spite of the fact that the ore is not rich in iron, may be profitably utilized. The rich mines of northern Sweden are bound by long contracts to pay tribute to the Germans. Just now efforts are being made to buy 2,170,000 tons of iron ore from the Russian mines of Krivoirog at 12s. ($2.92) a ton f. o. b. Nikolajev. The Algerian mines that have not begun to yield a very large supply will be needed by France. Unless Labrador is found to be rich in iron ores, England will have to take thought for to-morrow along certain lines of her iron-ore supply.

Importation of Fruit into England.—A report to the Mexican Government by the Mexican consul in England, Mr. Conde, says that the Association of Liverpool Fruit Merchants has sent an expert delegate to the United States and Canada for the purpose of studying in a very careful manner the cultivation and marketing of fruits in those countries. He selects the following interesting sentences from the expert's report:

> The company called the United Fruit Company has its principal offices in Boston. It is made up of the leading fruit men or houses in Canada and the United States, and it has offices and representatives everywhere in the United States and Canada. The company claims that it imports and distributes nine-tenths of all the bananas and other fruits brought in from the West Indies, and it owns or controls the best or most fruitful lands of the West India Islands. In a word, it practically controls the trade. It is able to put into the hold of one ship from 35,000 to 40,000 bunches of bananas and land them in Boston in six days and then get them to the trains for further transportation inside of ten or twelve hours.

The report goes on to explain the company's methods of receiving, transporting, etc., and comes finally to a part vitally interesting to the United States. He refers to Canada, and says:

> The principal fruits produced by Canada are apples, pears, peaches, cherries, grapes, melons, and tomatoes. As an article of trade the apple leads easily. The Provinces in which the fruit is produced in the largest quantities and best qualities are Ontario and Nova Scotia. The railroad companies have excellent facilities for the transportation of the fruit as soon as it is picked and packed. For instance, a car can be loaded in an afternoon at a fruit center and emptied the next morning in Montreal, 400 miles away. There are estates with 500 acres of fruit, while the average size is from 40 to 100 acres. Very fruitful trees yield from 3 to 5 barrels each. Peaches are produced in hundreds of tons. They are sent to the large cities, where they sell for 1½ cents a pound, or are sold to the preserving factories for much less. Grapes, too, are produced in large quantities and are often sold by the ton. They sell sometimes as high as £6 ($29.20) per ton. Superior qualities of tomatoes are raised in huge quantities, and it is a common thing to see crates containing 25 to 30 pounds sold for 1s. (24 cents), and a dozen fine melons for 2s. (48 cents).
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> In the last five years the Canadian government has devoted considerable time and money to establishing and directing fruit experimental stations. These extend from Nova Scotia to British Columbia—from 3,000 to 4,000 miles through diverse lands (soils) and climates. The studies relating to agriculture and horticulture, etc., are directed by professors and managers of large experience. The central branch of the system is in Ottawa. Experiments are made on all kinds of fruits on lots of land prepared and assigned for the purpose. The results are published every five years, care being taken to note during the time as it passes all the good and bad effects, conditions, and circumstances. They study especially the customs of the various insects and parasites that injure and destroy the fruit, and they send out the remedies discovered. They take care to protect the birds that live on the injurious insects.
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> The Canadian government has put the law of fruit marks into effect. According to this law all the fruit destined for export must be carefully selected, classified, etc., but particularly ought this to be done in the case of apples. It requires the name and address of the packer to be written clearly and open to view in each barrel, box, or crate; also the class of fruit; also a declaration that the receptacle (barrel in the case of apples) does not contain less than 90 to 100 pounds of uniform size and that it is free from blemished fruit, worms, and other defects. No one is permitted to sell a barrel or box or crate that is not thus marked. Besides all this the government sends experts to all parts of Canada to give lectures on the preparation and marketing of fruit and to explain to the farmers and packers the full meaning of the law.

Industrial Development of Ireland.—European papers are commenting favorably on the industrial outlook in Ireland. The Handels Museum of July 9 says the improved prospects brought about by the land bill recently laid before Parliament by the present Government is increasing the desire of capitalists to invest in Irish industrial enterprises. An English-Irish syndicate has been formed for the purpose of removing one of the worst evils with which Irish industrial development was afflicted, viz, dear coal. The industrial difficulties due to the absence of coal in Ireland are to be removed by the use of turf, in which the island abounds. This is to be cut, dried, and pressed into bricks. A commission of experts was sent recently by the syndicate to Continental Europe for the purpose of studying the methods of manipulating peat, turf, and bog-land fuel. The results were very satisfactory, much more than justifying the expense and effort. The expert evidence resulted in the establishment of a turf-brick mill in the north of Ireland with a daily capacity of 150 tons. Others are to be erected, as soon as possible, in other parts of the island where turf is found.

Another industry intimately connected with the breaking up of the great Irish estates is the production of spirits and starch from potatoes. Several distinguished persons are participating in this industry, and the company commands many millions of dollars. This company sent experts to the Continent, particularly to Germany. They made a complete study of the methods of production, the machines used, the drying and other apparatus, etc. The Germans are looking for a large market in Ireland for their machinery, but expect that the world's spirit and starch market will be materially affected by the Irish product.

Hints for the Export of Leather Goods.—The following is taken from the August number of the Chamber of Commerce Journal, of London, England:

Machinery belting in Servia, under the classification "saddlery and gloves and other goods not specially enumerated," had hitherto to pay an import duty of 100 dinars ($19.30) per 100 kilograms (220 pounds). In accordance with a decree issued at the end of January of the present year, it may now be imported as "machinery and parts of machinery," free from duty, if imported by manufacturers for their own use. The French consul at Lima reports that of foot gear Peru imports especially ladies' shoes. Men's shoes are mostly made in the country. Leather gloves do not meet with a large sale, as cotton and silk thread gloves are principally worn. Saddlery is almost exclusively supplied by England, whence also the largest part of the driving straps is imported. The German consul at Rio de Janeiro says the total importation of leather, hides, and goods made therefrom into Brazil amounted during the first eleven months of 1901 to 4,379,000 milreis* ($2,392,934), of which France sent 1,950,000 milreis ($1,056,000) and Germany 1,372,000 milreis ($749,112), while Great Britain and the United States appear only with the import values of 422,000 and 402,000 milreis ($230,412 and $219,492). Almost nine-tenths of this importation consisted of leather and hides; of goods of this class only the value of

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* The milreis is reduced to United States currency at the United States Treasury valuation of the gold milreis, it being assumed that the German consul at Rio de Janeiro figured on that basis, and a comparison of the trade of Germany and France with Brazil bears out this assumption. While gold milreis figures in official estimates, the depreciated paper milreis is the circulating medium of Brazil and that in which all business is transacted. The present value of the paper milreis may be accepted at 15 cents.

453,000 milreis ($247,338) was imported, principally from France, Germany, and to a small extent Great Britain. The import duty on hides and skins amounts, with few exceptions, to 30 per cent on the value; only for lacquered leather the charge is 60 per cent. This charge is almost without exception made on leather goods.

Great Britain's Cotton-Goods Trade.—The Commercial Intelligence, in its issue of July 23, commenting on Great Britain's cotton-goods exports, furnishes the following figures for the shipments of the first six months of the years indicated:

	Yards.
1903	2,621,587,700
1902	2,704,335,700
1901	2,593,204,700

According to the Commercial Intelligence, Great Britain has, in round numbers, 650,000 looms. Of these, estimates say 50,000 are idle and 150,000 on short time. One authority says 300,000 hands are earning distinctly reduced wages, which means a total loss of £30,000 ($145,995) a week. There are 44,000,000 spindles in the cotton mills. Of these, 33,000,000 are on short time and 115,000 hands are affected—another weekly falling off of fully £30,000 ($145,995).

The shipments of yarn for the first six months of the years selected for comparison were:

	Pounds.
1903	79,504,300
1902	83,645,400
1901	79,753,400

In textile machinery the tale is even more alarming. The values of shipments were:

1903	£2,150,822=	$10,466,975.26
1902	2,043,227=	9,943,364.70
1901	2,517,770=	12,252,727.20

The Commercial Intelligence further says:

> The cotton-machinery establishments in Oldham and Bolton are still very slack, many of the artisans being only partially employed. Few new orders of magnitude are coming around from abroad. The machine firms are busy trying to float companies in Lancashire to erect cotton mills. At the moment they are, for obvious reasons, not meeting with much success, though capital is proffered.

Labor in England in 1902.—The labor department of the British Board of Trade, in its annual report, says:

> The principal feature of the changes in rates of wages last year was the fall in the coal-mining industry, which accounted for 95 per cent of the total recorded decrease. There were also reductions in the shipbuilding trades in the north of England, and the decline has spread this year to other shipbuilding centers, and

has been followed by reductions in some of the allied trades. No important changes occurred in 1902 in the other groups of trades, but the tendency where such changes took place was, on the whole, upward. In the industries for which statistics are obtainable, 890,000 work people (approximately 11 per cent of the whole) had their wages changed, of which 92,000 received advances during the year amounting to £5,300 ($25,792) per week, or an average of 1s. 2d. (28 cents) per head, while 793,000 sustained decreases amounting to about £78,000 ($379,587) per week, or an average of 2s. (50 cents) per head. The net result of the change was a decrease of £72,700 ($353,795) in weekly wages, the net decrease in the year's wage bill being roughly estimated at £2,300,000 ($11,192,950). It may be mentioned that there were also decreases in these figures in 1901, but in 1900 they increased. We are pleased to be able to record, however, that the proportion of changes of wages in 1902, preceded by disputes causing stoppage of work, was even lower than in 1901, hitherto the lowest recorded, thus showing the beneficent work being done by conciliation and arbitration boards and similar agencies. With regard to changes in hours of labor, the statistics for 1902 are entirely dominated by the figures relating to a reduction of working hours on Saturdays caused by the factory and workshop act, 1901, that came into force at the beginning of 1902. Last year was less affected by labor disputes than the preceding one, and was well below the average of the previous four years. As is frequently the case, the mining industry heads the list with the largest number of persons affected by disputes, viz, 81 per cent of the total, and the greatest aggregate duration of disputes, viz, 73 per cent of the total. The building trades and the transport and dock labor group again showed a great reduction in the number of persons affected, and the figures for the important metal, engineering, and ship-building group were also remarkably small. Questions of remuneration were, as usual, the most frequent causes of dispute, these comprising 60 per cent of the total, while of the total number of work people affected by disputes 36,917 were successful, 35,515 were entirely unsuccessful, and 41,645 accepted compromise. In regard to the mode of settlement of disputes, the percentages effected by arbitration and conciliation both decreased, and the bulk of the disputes were, as in other years, settled by direct negotiations between the parties concerned or their representatives.

Subsidizing Hungarian Flax and Hemp Production.—The following notes have been translated by the Bureau of Statistics, Department of Commerce and Labor, from Das Handels Museum, the official organ of Austria:

The Hungarian Minister of Agriculture shows a lively interest in the movement among Hungarian farmers favoring a more intensive system for producing hemp and flax in the Hungarian fields. He is exercising the power vested in him by the legislature to encourage the industrial manipulation of hemp and flax by affording State aid to all those meeting the requirements or stipulations provided by the acts making the grants and giving him power. The aid is afforded or based upon the following conditions:

1. Societies, manufacturers, or corporations who erect a hemp and flax mill of large capacity and fully equipped, and who will bind themselves to take, as far as possible, a certain quantity of raw material (hemp and flax) from small farmers at a fixed price, may obtain a loan of fully 50 per cent of the building and equipment expenses up to a maximum of 75,000 crowns ($15,225). The repayment is to begin in the eleventh year after the establishment of the concern and is to be made in

partial payments during fifteen years. Thus the loan lasts practically for twenty-five years.

2. Associations that put up small mills may get State aid up to a maximum of 50,000 crowns ($10,100); not repayable, if a majority of their shares are in the hands of small farmers.

3. Village communities and small agricultural societies may receive, upon erecting a hemp-steeping shed, a nonrepayable State stipend up to 5,000 crowns ($1,010), provided they add the necessary auxiliaries, such as fields, barns, and waterworks.

4. In cases where, within twenty-five years after the erection of the works, the establishment should fail to go on or should be used for other purposes than those for which the subsidy was paid, the loan will have to be paid back to the Government.

5. The State loans and the nonrepayable subsidies will not be paid out before the buildings have been put up and have been inspected by or for the Government.

6. Except where permission has been granted to do so, only Hungarian products may be used in these subsidized factories.

7. The establishments supported by the State will be under State control and inspection.

Formation of Sugar Cartel in Austria Abandoned.—The Commercial Intelligence says that because of the demands of the refineries for the sole right of supplying the home market, negotiations for the formation of a new sugar cartel have been discontinued. It expresses the belief that Germany will follow Austria's lead, and that the project of getting together some sort of sugar cartel after the end of September will not be revived. German trade circles are also of opinion that this Austrian failure will probably prevent the realization of the international sugar-allotment scheme.

Exports and Imports of France.—According to official returns, French importations during the first six months of 1903 are shown in the following table and are compared with those of 1902:

IMPORTS.

Article.	1903.	1902.	Increase or decrease.
Food products	$79,553,442	$70,502,514	+$9,050,028
Materials for manufactures	303,682,991	287,797,933	+15,885,058
Manufactured articles	77,432,372	74,701,036	+ 2,731,336
Total	460,668,805	433,001,483	+27,667,322

EXPORTS.

Food products	$57,997,658	$65,005,681	−$7,008,023
Materials for manufactures	112,169,477	111,070,921	+ 1,677,556
Manufactured articles	201,436,416	203,292,304	− 1,855,888
By package post	26,794,190	23,212,689	+ 3,581,501
Total	398,397,741	402,581,595	− 4,183,854

Proposed Municipal Gas for Paris.—French papers say that after defeating the Deraluez-Duchanoy project and the proposal for an extension of the contract with the Compagnie du Gaz, a final resolution was passed unanimously recommending the Paris municipality to manufacture their gas themsélves. In order to carry out the scheme they would require about $50,000,000, part of which would go for compensation and taking over the old gas works. As the préfet de la Seine is opposed to the project, there is some doubt about the French Government approving this new municipal venture.

Shipping at Hamburg in 1902.—According to a report from Hamburg prepared by Consul-General Sir William Ward and published in the Commercial Intelligence, the registered tonnage of ships of all nations entered in 1902 was 8,689,000 tons, of which 3,126,000 tons (36 per cent) were under the British flag. The German tonnage was 4,617,000 tons, or 53 per cent of the total. By way of contrast it may be noted that the United States tonnage was 2,147 tons and that only one ship visiting the port during the year bore the United States flag. A careful analysis of the shipping rereturns for the port shows that there was an increase and decrease in the tonnage as follows:

Country.	Tonnage.	Country.	Tonnage.
Increase.	*Tons.*	*Increase*—Continued.	*Tons.*
Great Britain	181,759	Greece	25,129
Germany	144,577	Austria-Hungary	23,810
Holland	10,108	*Decrease.*	
Sweden	4,496	Norway	51,780
France	7,358	Spain	31,156
Belgium	2,396	Russia	6,930
Italy	6,258	Denmark	5,179

During the year the Hamburg-American Steamship Company added 7 new vessels to its fleet, which, on January 1, 1903, numbered 130 steamers of 577,062 net register tons. While in 1886 this company only owned 22 steamers with a total of 60,000 net register tons, during the past sixteen years it has increased its fleet by 108 steamers and by more than 500,000 net register tons and is now holding the largest amount of steam tonnage in the world.

Quinine in Africa.—The Deutsche Kolonial Zeitung says the cinchona plant, from which quinine is obtained, is most successfully grown in Amani, in Africa. Most of the East African plantations are raising cinchona from seed obtained in Amani. The results are everywhere the same—very satisfactory. In Balangi the planters intend to devote most, if not all, of their time, land, and care to the cinchona.

Colonial Education in Italian Africa.—The Bulletin of the Società Africand d'Italia publishes a long article describing the inauguration ceremonies of a new colonial school just opened at Asmara, in Italian Africa. The school, while limited to elementary education, is only a beginning. Those interested in the African colonies of Italy cherish the hope that the higher grades of work will soon be added. A new colonial school has been opened at Erythrea.

Reduced Shipping Rates to South Africa.—South African papers report the following:

> It is stated by the manager of the joint Beira and Mashonaland railways that the shipping rates to South Africa, which have been a serious matter to the mercantile community for many years, have been reduced, and, as illustrating the value of the modification, he quoted that the saving in shipments of coal to the joint railways represented about $110,000 a year. The reduction on coal freights is about 60 per cent, while on general merchandise there was a concession of about $10 a ton. The South African shipping ring formerly charged $19 a ton plus 10 per cent; now the British India Line charges $11.

German Trade with Abyssinia.*—From the Commercial Intelligence it is learned that Emperor Menelik's new coinage is to be made with machines manufactured in Germany. They have been delivered by the Vulcan Company of Stettin and cost some $50,000. Herr Arnold Halz, a German subject, is at present in Germany making large purchases of German manufactures for the Negus. Germany has no consular representation in Abyssinia, and Menelik's orders are used for urging the advisability of making good the deficiency.

A Mosquito Plant.—The Deutsche Kolonial Zeitung reports the finding in North Nigeria of a plant (*Ocimumviride*) two or three of which, when placed in a room or on a veranda, will remove mosquitoes. The effect is produced by the odor exhaled. This resembles thymian and eucalyptus. The natives extract an essence from the plant that is an excellent substitute for quinine. It is not only equal in its effects, but it lacks many of quinine's disagreeable attributes. The Deutsche Ostafrika Zeitung reports that a great many natives are familiar with a mosquito plant, called by them "rumbasi," which has similar properties to the one above described.

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* See "Mint machinery for King Menelik," ADVANCE SHEETS No. 1710.

British Exports to South Africa.—In its issue of July 25, South Africa says British exports to South Africa amounted to £3,783,585 ($18,412,916) in the first six months of 1901, £5,615,950 ($27,330,021) in the same period of 1902, and £7,156,323 ($34,826,-247) in the first half year of 1903. The items entering into the trade during the first half of 1903 were:

Article.	Value.	
Textiles and clothing	£3,349,346	$16,299,594
Metals	1,682,607	8,188,407
Machinery	1,055,818	5,138,138
Metal wares	211,467	1,029,104
Miscellaneous	857,085	4,171,004

German vs. British Colonial Methods.—A letter to an English paper from a Mr. John Holt, an expert in South African affairs, says that in dealing with its South African colonies Germany has adopted methods that England and others might profitably emulate. He calls attention to $48,665 voted by the German Imperial Government for the purpose of exploiting the mineral and economic products of West Africa. He points out that railways in German East Africa are built much more cheaply than are those laid down in the British West African colonies. Then, again, the German Government has provided slip ways for repairing vessels in those far-off parts of the world, whereas if an English ship should break down at Tago she would have to proceed to England for repairs. Mr. Holt urges the establishment of a floating dock at Forcados or some equally convenient and important point.

The Cape Fruit Trade.—The South African Review, in its issue of August 1, 1903, says:

> South Africa is probably destined in the near future to become a formidable rival to California and Australia as a competitor for the English market in the supply of fruit. That period has not yet arrived, but, judging from the satisfactory results of the season just closed, much progress is being made in that direction. There were 21,968 boxes of Cape fruit received the past season, as against 14,998 boxes in 1902, the increase being principally in plums, grapes, and peaches. While these three are the leaders in export, yet there were pears, apricots, apples,

nectarines, quinces, pines, naartjes, oranges, lemons, and pomegranates among the fruits received from the Cape. So far, plums have made a better showing by reason of the fact that they ship better and more attention has been given to their cultivation than other fruits. Such varieties as Kelsey Japan, Wickson, Satsuma, Coe's Golden Drop, and Simoni have been cultivated by the Rhodes Fruit Farms, Limited, and the Meerlust Fruit Farms. These are the best for shipping and retaining their flavor. Peaches form one of the most important items in South African fruit production. However, the bulk of this fruit received in London in the past is very inferior, with one or two exceptions. There is a good demand for peaches during January, February, and March, and what is wanted is a white-flesh peach with a good color and regular in size and shape. The grape trade has been even more unsatisfactory than the peach trade, because they do not carry well. In many instances only one-fourth of a consignment has been received in sound condition. More attention to cultivation and preparation for shipment will overcome this difficulty.

Gold Production in the Transvaal.—South Africa, a journal published in London, in its issue of July 25 gives the gold yield of the Transvaal for the years indicated in the following table:

Total output of gold from the Transvaal (Rand and outside districts) to date.

Year.	Value.	
1884	£10,000	$48,665.00
1885	6,000	29,199.00
1886	35,000	170,327.50
1887	169,000	822,438.50
1888	967,000	4,705,905.50
1889	1,491,000	7,255,951.50
1890	1,870,000	9,100,355.00
1891	2,938,000	14,297,777.00
1892	4,698,000	22,862,817.00
1893	5,649,000	27,490,858.50
1894	7,809,000	38,002,498.50
1895	8,578,000	41,744,837.00
1896	8,598,000	41,842,167.00
1897	11,476,000	55,847,954.00
1898	16,044,135	78,078,683.17
1899	15,782,640	76,806,217.56
1900	1,457,684	7,093,819.00
1901	1,014,687	4,937,974.28
1902	7,269,888	35,378,909.95
1903 (to June 30)	5,579,730	27,153,756.04
Total	101,442,764	493,671,211.00

Development of Rhodesia.—The Commercial Intelligence states that in December, 1901, the British South Africa Company opened 1,240 miles of railway, and that there are now 1,557 miles of 3½-foot gauge and 84 miles of 2-foot gauge. Connection has been established between Beira and Bulowayo. The output of gold has increased from 10,650 ounces in January, 1901, to 22,137 ounces in May, 1903, with an average of 20,000 ounces for the first six months of this year. It is intended shortly to throw open northern Rhodesia to prospectors and settlers. The trunk railway to the north is approaching Zambezi, and large discoveries of gold, copper, lead, zinc, and coal are reported to have been made. The mileage of the railways in progress in southern Rhodesia is now nearly 2,000 miles—greater than those of the Transvaal, Orange River Colony, and Natal combined. The immense deposits of coal in this territory are only slightly inferior to those in South Wales. Gold is being produced at the rate of about $5,000,000 per annum. There are vast deposits of copper, lead, zinc, and other minerals, while the soil and climate are adapted to the cultivation of grain, native cotton, and tobacco.

Labor Question in South Africa.—Lord Milner, high commissioner for British South Africa and governor of the Transvaal and Orange River colonies, in a dispatch dated May 12 last to Mr. Chamberlain recommending the employment of 10,000 Indian coolies in the construction of the proposed railways in the new colonies, expresses the opinion that "the question of labor is beginning to assume a really alarming aspect." The proposal was to import the laborers under indenture and repatriate them at the termination of the contract. Lord Milner's dispatch concluded as follows:

> Question of labor is beginning to assume a really alarming aspect. There are not enough natives in South Africa, if they all worked, for our growing requirements, and wherever we turn outside for fresh supplies, with the solitary exception of British Central Africa—from which we may get at most 10,000—we are met with a non possumus (we are not able). I have to point out that this country has taken upon its shoulders an enormous burden of debt in reliance on its enormous resources; but it can not develop resources without labor, and if we are destined to meet with a refusal wherever we turn to look for labor we must soon be landed in financial embarrassment. The avoidance of this is, it seems to me, a matter of more than merely local concern. There is no doubt that coolies for the railways would afford us considerable relief by setting free natives for mines and agriculture. It is also, in my opinion, certain that the introduction of Indian labor for the purpose for which I want it would greatly facilitate a reasonable settlement of the British Indian question here, as it would tend to remove some of the intense local prejudice against Indians. At present we are in the absurd position of being flooded by petty Indian traders and hawkers, who are of no benefit whatever to the community, and not allowed to have Indian laborers, whom we greatly need.

On May 23 Mr. Chamberlain replied as follows:

> Your proposal is, of course, entirely different in character from any hitherto made. It contemplates the introduction of a fixed number of manual laborers for a special purpose and on a strictly temporary footing, provision being made that by the terms of their contract these laborers will return to India at the end of the

period of their indenture, and will not be a permanent addition to the population of South Africa. It appears to me, therefore, that the scheme is in no sense an immigration scheme and is not open to many of the objections which have been entertained and strongly urged by certain sections of the European population to the employment of Asiatics in the mines and elsewhere.

But the Secretary for the Colonies insisted that it was necessary such a new departure should meet with the general approval of the white population; that "the new colonies must be regarded as destined at some date not far distant to enter upon the privileges of self-government, and that in anticipation of this event no such serious step should be taken which would be likely to be reversed by an autonomous legislature." Mr. Chamberlain added, in conclusion:

> I have not yet received your own proposals for fresh legislation in modification of the law of the late Republic, and I am not aware whether you have contemplated the feasibility of meeting the wishes of the Indian government on all these points. But if it is, in your opinion, practically out of the question to expect that public opinion will agree to this condition at the present time, it will be very difficult, if not impossible, to obtain the consent of the Indian government to the proposal for the special indenturing of coolies for the railways. The secretary of state of India feels strongly that the position of British Indians in the two new colonies is most unsatisfactory, and regards the conditions which he lays down as moderate and reasonable, and it is necessary to convince him that his objections to the present state of things will be fairly met by the reforms which you contemplate before it will be possible to enter on negotiations with the Indian government with any hope of a favorable result.

That the aspect is not quite so serious as Lord Milner apprehends is suggested by an article contributed by the special commissioner of the Pall Mall Gazette to the columns of that journal of the issue of July 30, three months after Lord Milner's dispatch. This article, together with the African Labor League's manifesto, adds much weight to the views of the Colonial Secretary. The special commissioner of the Pall Mall Gazette concludes as follows:

> The enormous influx of white labor that has been, and still is, going on has brought with it the labor leader, the trade agitator, and all the rest of it. Trades-unionists are now making a bid for parliamentary representation, a thing unheard of before. They will get it, and they will become an increasingly powerful party. And they will produce that check upon the capitalist in politics for which the Bond are praying. But, while the labor member will fight the capitalist, he will also fight the Bond, for your colonial labor legislator may be a Democrat, a Radical, or a Socialist even, but, strange to say, in spite of all this, he is ultra-progressive and an Englishman before anything else. And his influence in politics in Cape Colony will do more toward smothering anti-British feeling than anything else.

As a result of all this a labor league has been organized, which has published a manifesto in which it states its belief in the future of South Africa for white people and claims that that country has the strongest geographical position on the Southern Hemisphere, and that in the event of a European war it would be the key to the East and South. The league says that South Africa must never be made to depend upon a "race of helots." It is bitterly opposed to the introduction of Asiatic labor under any pretext.

Traffic on the Suez Canal.—The August number of the London Chamber of Commerce Journal gives the following interesting information from the official report of the Suez Canal traffic:

Last year 3,708 vessels, of a net tonnage of 11,248,413 tons, passed through the canal, an increase over the previous year of 9 vessels and 424,573 tons, and over 1900 of 267 vessels and 1,510,261 tons. Transit receipts amounted to 103,720,020 francs, and were higher than in any previous year since the opening of the canal, showing an increase of 3,333,623 francs, as compared with 1901. The Suez Canal directors remark that "no special reason can be assigned for the increase in the trade through the canal, except that the économical situation of India has recently improved and that there has been an increased activity in the trade with the East."

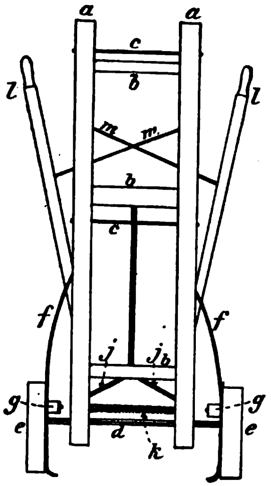
Nationalities of shipping.—The number of vessels which passed through the canal was 3,441 in 1900, 3,699 in 1901, and 3,708 in 1902, of which 1,935, 2,075, and 2,165, respectively, carried the British flag. There was an increase last year, compared with 1901, in the tonnage of British vessels, which amounted to 5,605,421 tons in 1900, 6,252,819 tons in 1901, and 6,772,911 tons in 1902. During the same period the tonnage of German vessels has fluctuated from 1,466,391 tons in 1900 to 1,762,624 in 1901 and 1,707,322 tons in 1902. The percentage of British vessels and their net tonnage increased in 1902, being 58.4 per cent and 60.2 per cent, respectively, as against 56.1 per cent and 57.8 per cent in 1901 and 56.2 per cent and 57.6 per cent in 1900, while the percentage of German vessels and their net tonnage decreased in 1902, being 12.9 per cent and 15.2 per cent, respectively, as compared with 13.8 per cent and 16.3 per cent in 1901 and 13.4 per cent and 15.1 per cent in 1900. The percentage of net tonnage of the other maritime nations using the canal last year remained practically stationary, as compared with 1901.

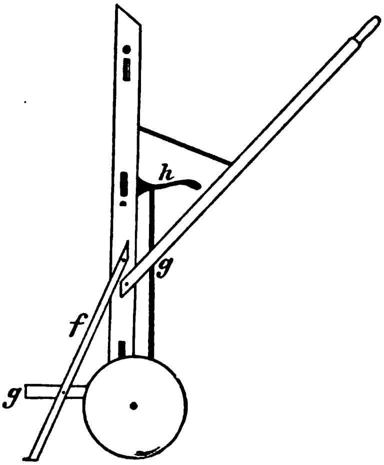
Different vessels passing through the canal.—The 3,708 vessels of a net tonnage of 11,248,413 tons using the canal in 1902 consisted of the following: Merchant vessels, 2,700, of 7,996,514 tons; mail steamers, 822, of 2,864,938 tons; war ships and transports, 122, of 180,831 tons; government chartered vessels, 31, of 141,161 tons; and vessels in ballast, 33, of 64,969 tons. Of the 2,733 merchant vessels and vessels in ballast, of a net tonnage of 8,061,483 tons, passing through the canal, 1,906 ships, of a net tonnage of 5,848,460 tons, were British, being 69.7 per cent of the number and fully 72.5 per cent of the tonnage; 332, or 12.2 per cent, were German vessels, whose tonnage was 13.3 per cent of the whole; France, Holland, Austria-Hungary, and Russia combined furnishing a total of 13.2 per cent of the vessels and 11.5 per cent of the tonnage of the carrying trade to the East through the Suez Canal.

Duration of passage and draft of vessels.—Notwithstanding the increase in the quantity of tonnage, the mean duration of passage for all vessels navigating the canal was reduced to eighteen hours two minutes in 1902, as compared with eighteen hours forty-one minutes in the previous year, while the percentage of vessels navigating by night increased from 93.7 per cent in 1901 to 95.5 per cent in 1902. The percentage of vessels drawing less than 24 feet 7 inches was 88.4 in 1902, as against 88.1 in 1901, while that of vessels drawing more than 24 feet 7 inches was 11.6 in 1902 as compared with 11.9 in 1901. Until the end of the year 1901, the maximum draft allowed for vessels passing through the canal was fixed at 25 feet 7 inches, and 431 vessels drawing more than 24 feet 7 inches used the canal, as compared with 439 in 1901 and 402 in 1900, representing a percentage of 11.7 in 1900, 11.9 in 1901, and 11.6 in 1902. From January 1, 1902, the maximum draft allowed has been raised to 26 feet 3 inches, and during the year 69 vessels, or 1.9 per cent, took advantage of this improvement. During last year 297 vessels passed through the canal for the first time, of which 61 belonged to shipping companies whose vessels regularly use the canal.

Troops and passengers carried through canal.—The number of troops carried through the canal last year amounted to 84,946, against 136,514 in 1901, being a decrease of 51,568. There was an increase of 8,528 British, 272 American, and 130 Portuguese, against a decrease of 21,597 Russian, 17,677 German, 13,433 Turkish, 6,743 French, 600 Italian, 245 Japanese, and 176 Dutch troops as compared with 1901. The number of civilian passengers amounted to 98,213 in 1902, as against 92,046 in the preceding years, being an increase of 6,167, while the number of pilgrims, emigrants, and convicts was 40,499 in 1902, as compared with 41,661 in 1901, or a decrease of 1,162.

Canadian Invention for Handling Cheese.—The following rough draft and description of a Canadian invention for handling cheese was sent to the Bureau of Statistics by parties who believe its publication would be of interest and value to the merchants and manufacturers engaged in the dairy trade.





The attached slip is a rough sketch of a Canadian invention which we use for handling cheese, and which we consider almost indispensable in our business. It consists of two wooden standards, *a a*, 2 by 3 inches by 5 feet high, securely fastened together by cross pieces and rods, *b b b* and *c c*. To these standards is fastened an iron axel, *d*, with wheels, *e e*, about 8 inches in diameter with 2-inch face fastened to either end. Strips, *f f* and *g g*, of band iron are used as clamps to catch the sides of the boxes of cheese, rendering it easy to pick up a pile of cheese as high as, or higher than, the truck. These clamps are operated by means of lever *h*, rod *i*, and braces *jj*, which, being pressed down, hold the clamps together on the boxes. These are held in place by a "dog" on the back of truck, which is not shown in the drawing; which, being released, allows spring *k*, fastened to the rear end of *gg*, to draw said clamps together at the back, thus spreading them at the front and releasing the boxes. The operator wheels the truck up to the pile of cheese, presses down lever *h*, tips the truck so as to about balance, when it can easily be wheeled along—carrying a load of from 350 to 400 pounds—by means of handles *ll*, which are braced with braces *m m*.

Canadian Paper Industry.—European papers are publishing interesting comments on Canada's paper production. They say that its resources of raw material for paper making are practically inexhaustible. A production of fully 1,300,000 pounds every twenty-four hours is looked for in the near future. The present capacity certainly gives promise of this output. These figures include paper of all kinds. The industry is 75 years old, has 40 mills, and is turning out a constantly improving quality and quantity. It is meeting foreign competition with more than fair prospects of success. It is succeeding in replacing many foreign grades with the domestic production. Still, imports of the finer kinds of foreign grades are increasing. They amounted to $1,140,000 in 1898 and to $1,950,000 in 1902. The kinds imported are blotting, fine writing, printing, and carpet paper.

Mexico's Iron and Steel Importations.—El Economista Mexicano gives the following table covering Mexico's importations of iron and steel for building purposes:

Fiscal year.	Iron and steel for building purposes.	Machines and apparatus.
1893–94	$1,250,582	$3,399,331
1894–95	1,543,451	3,574,507
1895–96	2,015,769	4,942,920
1896–97	2,066,387	4,347,428
1897–98	2,203,199	6,039,476
1898–99	2,253,685	7,733,407
1899–1900	4,150,704	9,532,270
1900–1901	3,697,372	9,124,751
1901–2	3,946,888	8,095,502

The importations of machines and apparatus in the current fiscal year amounted to $7,431,871, against $5,594,513 for a like period in 1902.

Mexican Imports and Exports in 1902 and 1903.—The Treasury Department of Mexico has issued a statement showing the foreign commerce of that country for eleven months, from July to May, of the years 1901–2 and 1902–3, from which the following tables have been prepared by the Bureau of Statistics, Department of Commerce and Labor:

Imports (gold valuation).

Products.	1902–3.	1901–2.
Animal substances	$4,337,975.39	$4,451,935.78
Vegetable substances	12,494,482.57	10,135,352.28
Mineral substances	21,733,221.10	18,355,601.92
Dry goods	8,986,049.95	7,710,488.47
Medicinal substances	2,479,061.75	2,445,207.63
Spirituous, fermented, and natural beverages	2,828,998.47	2,529,545.78
Paper and applications	1,732,817.32	1,724,631.99
Machinery, apparatus	2,299,807.51	7,391,174.42
Vehicles	1,355,649.79	1,215,209.52
Arms and explosives	1,573,743.10	1,280,842.69
Miscellaneous	1,964,237.98	1,777,552.48
Total	68,966,044.93	59,017,542.96
Increase	9,048,501.97	....

Exports (gold valuation).

Products.	1902–3.	1901–2.
Mineral:		
Gold (Mexican and foreign coin and bar gold)	$12,688,453.13	$8,566,712.54
Silver (Mexican and foreign coin and bar silver)	72,672,515.79	55,500,035.47
Copper	17,331,873.04	15,555,480.87
Lead	5,273,541.05	5,242,175.30
Other minerals	997,640.95	408,854.25
Total minerals	108,964,023.96	85,273,258.43
Vegetable products	52,324,895.81	46,688,559.89
Animal products	13,930,291.27	10,801,325.77
Manufactured products	3,466,544.53	3,267,150.59
Miscellaneous products	695,626.70	427,230.87
Grand total	179,381,382.27	146,457,525.55

Mexico's Trade.—In its Spanish edition of August 1 the Economista Mexicano published the following very interesting statement, showing the amount in Mexican silver dollars of Mexico's export trade during each fiscal year from 1881–82 to 1901–2; the average value of the Mexican silver dollar in New York during each year of that period; and these annual amounts reduced from silver to gold at the corresponding yearly average value of the Mexican silver dollar in New York:

Value of Mexico's export trade.

Year.	Exports.		Average value of Mexican dollar in New York.
	Silver valuation.	Gold valuation.	
			Cents.
1881–82	$29,206,772	$26,110,854	89.4
1882–83	41,919,182	36,972,719	88.2
1883–84	46,861,117	41,003,477	87.5
1884–85	46,811,958	40,445,532	86.4
1885–86	43,797,249	35,738,555	81.6
1886–87	49,329,915	38,970,633	79
1887–88	40,078,717	37,232,746	75.9
1888–89	60,380,287	44,621,032	73.9
1889–90	62,680,539	47,511,849	75.8
1890–91	63,425,746	53,087,349	83.7
1891–92	75,660,880	63,328,157	83.7
1892–93	88,044,624	57,845,318	65.7
1893–94	80,083,944	43,165,246	53.9
1894–95	95,020,326	48,940,448	51.4
1895–96	110,022,356	58,971,983	53.6
1896–97	117,784,092	59,127,614	50.6
1897–98	138,068,504	61,854,690	44.8
1898–99	148,453,834	70,070,210	47.1
1899–1900	158,247,933	75,326,016	47.6
1900–1901	158,009,437	77,266,639	48.8
1901–2	168,041,272	74,106,201	44.1

Cotton Growing in British Guiana.—The Colonizer (published in London, England) of July, 1903, states that the question of re-embarking in the cultivation of cotton in British Guiana is receiving serious consideration; that the country is admirably adapted for cotton growing; and that formerly there were 400 cotton estates, which exported 10,000,000 pounds of cotton annually. The principal drawback to the adoption of cotton cultivation on a large scale is the scarcity of reliable labor; but as there is great lack of employment for women of the peasant class and growing country lads, cotton picking would prove a blessing to such people.

A cotton growers' association has been started in Berbice to encourage the industry, and the commissioner of the Imperial Department of Agriculture for the West Indies is giving the enterprise the weight of his support. Besides all this, the directors of the Royal Mail Steam Packet Company, with a view to assisting in the development of cotton planting in the West Indies and British Guiana, have placed at the disposal of the British Cotton Growing Association free tickets to the representatives who visit those parts with a view to the establishment of plantations or the encouragement of the industry.

Trade Openings in the Argentine Republic.—The Chamber of Commerce Journal, of London, England, says:

> There is an excellent opening in the Argentine Republic, says British Consul Ross, of Buenos Ayres, for all appliances connected with or required in agriculture and grazing—tools, harness, seeds, bags, twine, fencing wire (plain and barbed), iron posts and droppers, gates, padlocks (insets), cattle brands, scales, windmill and other pumps, troughs, pipes, vets' instruments and books, sheath knives, tools, sheet iron, and enameled ware. Probably the Canadian and Australian types would suit better than the British. In a lesser degree, and for the million or so people who live in towns, are wanted, besides the usual necessaries of life, iron pillars and beams for house building, baths, and all kinds of sanitary fittings, electric lifts, lights, and bells, floor and wall tiles, water and oil paints, wall papers, and brickmaking and stone-working machinery. As regards methods of business, the consul says there is no doubt that an expert traveler, with fresh ideas, knowing Spanish, will in almost any line obtain sufficient orders to pay his expenses when a firm of good standing acting as agent will do little or nothing. Too careful attention can not be given to packing instructions to comply with customs' requirements and to satisfy the fancies of the market. Circulars and price lists are but little attended to even when in Spanish. As regards the selection of goods, constant change and novelty are essentials, and equally so strict adherence to the requirements of the buyer and low prices.

Bangalore-Chik Callapur Railway.—The project to construct a light railway from Bangalore to Chik Callapur, a distance of about 35 miles, has been approved by the Mysore government. The line will be of 2-foot gauge and the speed limited to 10 miles an hour. Telephones will be used along the line instead of the telegraph.

Opening up Trade with Tibet.—An authoritative statement has been made regarding the position of negotiations for opening up the trade with Tibet under the Anglo-Chinese convention of 1890, which has hitherto proved a dead letter. Great Britain has dispatched a representative, resident at Indore, to Khambalong, on the Sikkim-Tibetan frontier. to meet representatives of the Chinese and Tibetan governments to discuss the general question of the rules to be observed. Meanwhile, sappers and miners are engaged in improving the trade route between Siliguri and the northern frontier of Sikkim.

Foreign Trade in Korea.—The Colonizer, an English magazine devoted to the consideration of colonial problems, of July, 1903, says that the foreign trade of Korea in 1902, in spite of a bad harvest, was the greatest of any year except 1901. It amounted to $13,360,225, of which the imports were $6,727,210 and the exports $4,117,225, while the exports of gold were $2,515,790. The progress in the development of the mineral resources of the country is shown by increased imports of mining supplies and machinery. More railway material is required by the construction of the line from Seoul to Fusan. The Siberian Railway has brought Korea within twenty-one day's journey of London and the line from Seoul to Fusan, which is to be finished in two or three years, will bring Tokyo within forty-four hours of the Korean capital. Korea, therefore, offers every year a better market for foreign manufactures. The Japanese and Chinese are the chief merchants, especially the former, who are described as flocking to Korea in ever-increasing numbers, and Japanese influence is extending in many directions throughout the country. Russia is striving to increase her commercial intercourse with Korea. A Russian consulate has been established at Chemulpo on account of the increase of shipping interests there, and the Manchurian Railway Company's steamers are endeavoring to improve communication between Chemulpo, Shanghai, Port Arthur, and Dalny. The Hamburg-American Company has also just started a line to Chemulpo. The Japanese have a bank with branches at all the treaty ports, and have issued notes for circulation in Korea. The railway line between Chemulpo and Seoul has been absorbed by the Japanese company constructing the Fusan line, so that a railway from the sea on the west to the south, across the country, will belong to a powerful Japanese corporation.

Among Korean ports, Chemulpo takes the first place, Fusan second, and Wousan or Gensan third. The total shipping entering all the ports of Korea last year was 1,160,895 tons, of which 877,193 tons were Japanese, 165,782 tons Korean, 101,222 tons Russian, and 11,998 tons British.

The value of imports into Korea in 1901 was, according to the Statesman's Yearbook, 15,000,000 yen, or about $7,500,000; the value of exports from the United States to Korea were, in the fiscal year 1903, $171,400.

French Influence in China.—The Colonial Fortnightly, quoting another French paper—the Monitor of the Fleet—concerning the development of French influence and interests in the valley of the Yangtze Kiang, says:

> Two French merchants have established, under the title "Compagnie Asiatique de Navigation," a line of steamers flying the French flag, on the Yangtze Kiang, between Shanghai and Hankau. For many years these merchants have pursued their purpose to do this with great patience and energy. They have not despaired nor allowed themselves to be thwarted by any difficulty. Success is at last assured. The capital invested in the enterprise is partly French and partly Chinese. This goes a long way toward securing success, for the Chinese who have invested their capital in the company will hardly have done so before making up their minds to

send whatever freight they have by the new line. Two large steamers have been ordered at the arsenal of Fuchau, which a French engineer has skillfully directed since 1896. The keel of one has been laid already. These ships are to be 280 feet long, 42 feet wide, 10½ feet draft, and 1,200 tons burden. They are to have a passenger-carrying capacity of 800 coolies, third class; 60 cabins, with two beds each, and two saloons for the Chinese of the first and second classes; and a first-class cabin arrangement for Europeans. They are to make 15 knots with 200 tons on board. The fact that these two boats begin this work and were built at an arsenal directed by a Frenchman is cause for congratulation. This will prove profitable to our national industry, for had the Fuchau arsenal not built the boats the other yards, English or Japanese, had done so, in which case the French manufacturers and constructers would not have furnished a ton of the materials ordered by M. Dogère, the engineer above mentioned. We must praise our compatriots for their initiative in this enterprise. From it the arsenal at Fuchau is to derive benefit. Besides, French influence will be augmented, for hitherto the French flag has been rarely seen along the coasts and in the rivers of China. The English and German flags have monopolized the traffic. It is a happy omen for the French flag to appear again. The success of the mission Hourst, in the Yangtze Valley, will also aid in extending French influence into the very heart of China along the immense artery that traverses so large a part of the Empire.

Hints for Exporters to the Philippines.—The August number of the Chamber of Commerce Journal, of London, England, says:

Exporters of goods to the Philippines would do well to take careful note of the following hints as to the formalities to be observed in trading with these islands:

Catalogues.—Catalogues, which should be submitted in Spanish, should always contain the telegraphic address and the telegraphic codes in use. As correspondence with the Philippine Islands necessitates a very long delay, it often happens that exporters are obliged to cable; hence the application of a code to all the articles offered is an economy which should not be disregarded. Another important point is the quotation of prices for catalogued goods, otherwise the catalogues are of no more value than a book of illustrations. The weights and measurements of the articles shipped, as in customary packages, should also be given.

Packing and marks on packages.—Special care is needed in packing. The port is completely without protection and the bay is 30 miles in diameter. The sea is often—at least from June to October—so rough that all discharging operations are impossible; transshipment is carried on 2 miles from the shore, in native cargo boats, tossed about by the least agitation of the waters. Fortunately, the recent acquisition of large steel tenders has to a certain extent lessened this danger. In a short time boats will be able to ride and discharge directly in an artificial roadstead. In the meantime it is essential that goods should be packed very carefully. Each package should have clearly marked upon it the name of the consignee and its particular mark. It should also always bear an indication of its gross and net weight in pounds and kilograms, and also its cubical contents.

Invoices and other documents.—It is not possible to emphasize too clearly the necessity of the correct drawing up of the invoices. The following are extracts from the Philippine customs laws: (1) Each parcel must be enumerated in the invoice with its marks and numbers; (2) the contents of each package should be shown in detail, with the sale price and place of destination; (3) if the contents of a package fall under two separate classifications the weights of each component part of the package should be shown in the invoice and not the total weight (it would, in fact, be impossible for the customs officers to open hundreds of packages to classify the contents, weigh them, and estimate the duty); (4) the declared weights should include that of the box or papers which contain the articles (in fact the interior packing is not deducted, but pays the same duty as its contents); (5) exterior packing, such as cases, barrels, etc., is deducted, also the net tare and gross weight should be shown on the invoice as also on the package itself; (6) invoices should always be submitted in triplicate, two for the customs and one for the consignee. Manufacturers should choose as agents in the Philippine Islands persons of great experience. The customs officers at Manila are guided by fixed rules sanctioned by law and from which they are not able to depart. Exporters should apply themselves to these rules, otherwise great inconvenience both to themselves and the customs officers will be entailed. It is recommended that they should carefully study in the Philippine tariffs the separate classifications and draw up their documents in accordance therewith. Manufacturers should avoid putting small samples in their shipments, or else state clearly in the documents that they are such, otherwise importers would probably be obliged to pay duty on these articles and perhaps also a fine.

Bills of lading and insurance.—The exporter should send by the first mail after shipment of the goods a second bill of lading, in order that the importer may be informed before the arrival of the boat as to the details of freight. It is preferable to insure with companies having an authorized representative at Manila, of which there are several.

Commercial travelers in the islands of the Philippine Archipelago must, says the Bulletin of the Paris Chamber of Commerce, pay a tax of $150 Mexican per annum. This tax must be paid quarterly in advance. They have, besides, to take out a license in the town of Manila, costing $20 in gold annually, which must also be paid in advance. The samples which accompany commercial travelers are subject to the customs duties pertaining to the goods which they represent. When, however, their value is below $2,000 gold, the duty levied on their entry is reimbursed on their exportation, provided that this is effected at the customs entry office within three months, or six months at the latest. In the latter case the commercial traveler must, before the expiration of the first three months, obtain from the chief of the customs a prolongation of three months. In order to obtain the reimbursement in question the commercial traveler is bound to present the samples at the customs at least five working days before the date of reexportation, so that they may be identified. When the value of the samples exceeds $2,000 gold, the duty levied on the excess belongs definitely to the treasury, but the commercial traveler may, at the entry, select the samples on which an allowance of the duty is eventually to be made to him. Before the samples are permitted to enter on the terms specified above, the commercial traveler must take the oath required for the free entry of foreign merchandise, and he must, equally upon oath, make a declaration in accordance with article 220 of the customs laws.

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LIST OF PUBLICATIONS.

On July 1, 1903, the Bureau of Foreign Commerce of the Department of State, which has had charge of the publication and distribution of the CONSULAR REPORTS, was transferred to the Department of Commerce and Labor, in pursuance of provisions in the act of Congress approved February 14, 1903, creating that Department, and consolidated with the Bureau of Statistics, transferred from the Treasury to the new Department. Reports from consular officers on commercial and industrial subjects will hereafter be transmitted through the Department of State to the Department of Commerce and Labor, and the latter will publish and distribute them.

Requests for consular reports should hereafter be made to the Department of Commerce and Labor.

The publications formerly issued by the Bureau of Foreign Commerce will be issued in similar form by the Department of Commerce and Labor. They are as follows:

I.—COMMERCIAL RELATIONS, being the annual reports of consular officers on the commerce, industries, navigation, etc., of their districts.

II.—REVIEW OF WORLD'S COMMERCE, being a summary of the annual reports contained in Commercial Relations.

III.—CONSULAR REPORTS, issued monthly, and containing miscellaneous reports from diplomatic and consular officers.

IV.—DAILY CONSULAR REPORTS, issued daily, except Sundays and legal holidays, for the convenience of the newspaper press, commercial and manufacturing organizations, etc.

V.—EXPORTS DECLARED FOR THE UNITED STATES, issued annually, containing the declared values of exports from the various consular districts to the United States.

VI.—SPECIAL CONSULAR REPORTS, containing series of reports from consular officers on particular subjects, made in pursuance to instructions from the Department.

Following are the special publications issued prior to 1890:

Labor in Europe, 1878, one volume; Labor in Foreign Countries, 1884, three volumes; Commerce of the World and the Share of the United States Therein, 1879; Commerce of the World and the Share of the United States Therein, 1880–81; Declared Exports for the United States, First and Second Quarters, 1883; Declared Exports for the United States, Third and Fourth Quarters, 1883; Cholera in Europe in 1884, 1885; Trade Guilds of Europe, 1885; The Licorice Plant, 1885; Forestry in Europe, 1887; Emigration and Immigration, 1885–86 (a portion of this work was published as CONSULAR REPORTS No. 76, for the month of April, 1887); Rice Pounding in Europe, 1887; Sugar of Milk, 1887; Wool Scouring in Belgium, 1887; Cattle and Dairy Farming in Foreign Countries, 1888 (issued first in one volume, afterwards in two volumes); Technical Education in Europe, 1888; Tariffs of Central America and the British West Indies, 1890.

The editions of all the above-named publications are exhausted, and the Department is therefore unable to supply copies.

Beginning with 1890, reports on special subjects were published in separate form, entitled SPECIAL CONSULAR REPORTS. There are now the following SPECIAL CONSULAR REPORTS:

Vol. 1 (1890).—Cotton Textiles in Foreign Countries, Files in Spanish America, Carpet Manufacture in Foreign Countries, Malt and Beer in Spanish America, and Fruit Culture in Foreign Countries.

Vol. 2 (1890 and 1891).—Refrigerators and Food Preservation in Foreign Countries, European Emigration, Olive Culture in the Alpes Maritimes, and Beet-Sugar Industry and Flax Cultivation in Foreign Countries.

Vol. 3 (1891).—Streets and Highways in Foreign Countries. (New edition, 1897.)

Vol. 4 (1891).—Port Regulations in Foreign Countries.

Vol. 5 (1891).—Canals and Irrigation in Foreign Countries. (New edition, 1898.)

Vol. 6 (1891 and 1892).—Coal and Coal Consumption in Spanish America, Gas in Foreign Countries, and India Rubber.

Vol. 7 (1892).—The Stave Trade in Foreign Countries and Tariffs of Foreign Countries.

Vol. 8 (1892).—Fire and Building Regulations in Foreign Countries.

Vol. 9 (1892 and 1893).—Australian Sheep and Wool and Vagrancy and Public Charities in Foreign Countries.

Vol. 10 (1894).—Lead and Zinc Mining in Foreign Countries and Extension of Markets for American Flour. (New edition, 1897.)

Vol. 11 (1894).—American Lumber in Foreign Markets. (New edition, 1897.)

Vol. 12 (1895).—Highways of Commerce. (New edition, 1899.)

Vol. 13 (1896 and 1897).—Money and Prices in Foreign Countries.

Vol. 14 (1898).—The Drug Trade in Foreign Countries.

Vol. 15 (1898).—Part I. Soap Trade in Foreign Countries; Screws, Nuts, and Bolts in Foreign Countries; Argols in Europe, Rabbits and Rabbit Furs in Europe, and Cultivation of Ramie in Foreign Countries. Part II. Sericulture and Silk Reeling and Cultivation of the English Walnut.

Vol. 16 (1899).—Tariffs of Foreign Countries. Part I. Europe. Part II. America. Part III. Asia, Africa, Australasia, and Polynesia. Supplement (1900). Tariffs of Chile and Nicaragua.

Vol. 17 (1899).—Disposal of Sewage and Garbage in Foreign Countries; Foreign Trade in Coal Tar and By-Products.

Vol. 18 (1900).—Merchant Marine of Foreign Countries.

Vol. 19 (1900).—Paper in Foreign Countries; Uses of Wood Pulp.

Vol. 20 (1900).—Part I. Book Cloth in Foreign Countries, Market for Ready-Made Clothing in Latin America, Foreign Imports of American Tobacco, and Cigar and Cigarette Industry in Latin America. Part II. School Gardens in Europe. Part III. The Stave Trade in Foreign Countries.

Vol. 21 (1900).—Part I. Foreign Markets for American Coal. Part II. Vehicle Industry in Europe. Part III. Trusts and Trade Combinations in Europe.

Vol. 22 (1900 and 1901).—Part I. Acetic Acid in Foreign Countries. Part II. Mineral-Water Industry. Part III. Foreign Trade in Heating and Cooking Stoves.

Vol. 23 (1901).—Part I. Gas and Oil Engines in Foreign Countries. Part II. Silver and Plated Ware in Foreign Countries.

Vol. 24 (1902).—Creameries in Foreign Countries.

Vol. 25 (1902).—Stored Goods as Collateral for Loans.

Vol. 26 (1903).—Briquettes as Fuel in Foreign Countries.

Vol. 27 (1903).—Markets for Agricultural Implements and Vehicles in Foreign Countries.

Of these SPECIAL CONSULAR REPORTS, Australian Sheep and Wool, Carpet Manufacture, Cotton Textiles in Foreign Countries, Files in Spanish America, Fire and Building Regulations, Fruit Culture, Gas in Foreign Countries, Heating and Cooking Stoves, India Rubber, Lead and Zinc Mining, Malt and Beer in Spanish America, Money and Prices, Paper in Foreign Countries, Port Regulations, Refrigerators and Food Preservation; Sericulture, etc.; Silver and Plated Ware; Vagrancy, etc., are exhausted, and no copies can be supplied by the Department.

Of the monthly CONSULAR REPORTS, many numbers are exhausted or so reduced that the Department is unable to accede to requests for copies. Of the publications available for distribution, copies are mailed to applicants without charge.

Persons receiving CONSULAR REPORTS regularly, who change their addresses, should give the old as well as the new address.

VALUES OF FOREIGN COINS AND CURRENCIES.

The following statements show the valuation of foreign coins, as given by the Director of the United States Mint and published by the Secretary of the Treasury, in compliance with the first section of the act of March 3, 1873, viz: "That the value of foreign coins, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," and that "the value of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the 1st day of January by the Secretary of the Treasury."

In compliance with the foregoing provisions of law, annual statements were issued by the Treasury Department, beginning with that issued on January 1, 1874, and ending with that issued on January 1, 1890. Since that date, in compliance with the act of October 1, 1890, these valuation statements have been issued quarterly, beginning with the statement issued on January 1, 1891.

Attention has been repeatedly called to the fact that the market exchange value of foreign coins differs in many instances from that given by the United States Treasury. An explanation of the basis of the quarterly valuations was asked from the United States Director of the Mint, and under date of February 7, 1898, Mr. R. E. Preston made the following statement:

"When a country has the single gold standard, the value of its standard coins is estimated to be that of the number of grains fine of gold in them, 480 grains being reckoned equivalent to $20.67 in United States gold, and a smaller number of grains in proportion. When a country has the double standard, but keeps its full legal-tender silver coins at par with gold, the coins of both gold and silver are calculated on the basis of the gold value.

"The value of the standard coins of countries with the single silver standard is calculated to be that of the average market value of the pure metal they contained during the three months preceding the date of the proclamation of their value in United States gold by the Secretary of the Treasury. The value of the gold coins of silver-standard countries is calculated at that of the pure gold they contain, just as if they had the single gold standard.

"These valuations are used in estimating the values of all foreign merchandise exported to the United States."

The following statements, running from January 1, 1874, to April 1, 1903, have been prepared to assist in computing the values in American money of the trade, prices, values, wages, etc., of and in foreign countries, as given in consular and other reports. The series of years are given so that computations may be made for each year in the proper money values of such year. In hurried computations, the reductions of foreign currencies into American currency, no matter for how many years, are too often made on the bases of latest valuations. All computations of values, trade, wages, prices, etc., of and in the "fluctuating-currency countries" should be made in the values of their currencies in each year up to and including 1898, and in the quarterly valuations thereafter.

To meet typographical requirements, the quotations for the years 1875–1877, 1879–1882, 1884–1887, 1895, 1897, and 1899 are omitted, these years being selected as showing the least fluctuations when compared with years immediately preceding and following.

To save unnecessary repetition, the estimates of valuations are divided into three classes, viz: (A) countries with fixed currencies, (B) countries with fluctuating currencies, and (C) quarterly valuations of fluctuating currencies.

A.—*Countries with fixed currencies.*

The following official (United States Treasury) valuations of foreign coins do not include "rates of exchange."

Countries.	Standard.	Monetary unit.	Value in U.S. gold.	Coins.
Argentine Republic	Gold and silver	Peso	$0.96,5	Gold—argentine ($4.82,4) and ½ argentine; silver—peso and divisions.
Austria-Hungary*	Gold	Crown	.20,3	Gold—20 crowns ($4.05,2) and 10 crowns.
Belgium	Gold and silver	Franc	.19,3	Gold—10 and 20 franc pieces; silver—5 francs.
Brazil	Gold	Milreis	.54,6	Gold—5, 10, and 20 milreis; silver—½, 1, and 2 milreis.
British North America (except Newfoundland).	do	Dollar	1.00	
British Honduras	do	do	1.00	
Chile	do	Peso	.36,5	Gold—escudo ($1.25), doubloon ($3.65), and condor ($7.30); silver—peso and divisions.
Costa Rica	do	Colon	.46,5	Gold—2, 5, 10, and 20 colons; silver—5, 10, 25, and 50 centisimos.
Cuba	Gold and silver	Peso	.92,6	Gold—doubloon ($5.01,7); silver—peso (60 cents).
Denmark	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Ecuador †	do	Sucre	.48,7	Gold—10 sucres ($4.8665); silver—sucre and divisions.
Egypt	do	Pound (100 piasters).	4.94,3	Gold—10, 20, 50, and 100 piasters; silver—1, 2, 10, and 20 piasters.
Finland	do	Mark	.19,3	Gold—10 and 20 marks ($1.93 and $3.85,9).
France	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany	Gold	Mark	.23,8	Gold—5, 10, and 20 marks.
Great Britain	do	Pound sterling.	4.86,6½	Gold—sovereign (pound sterling) and half sovereign.
Greece	Gold and silver	Drachma	.19,3	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti	do	Gourde	.96,5	Silver—gourde.
India ‡	Gold	Rupee	.32,4	Gold—sovereign ($4.8665); silver—rupee and divisions.
Italy	Gold and silver	Lira	.19,3	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Japan §	Gold	Yen	.49,8	Gold—1, 2, 5, 10, and 20 yen.
Liberia	do	Dollar	1.00	
Netherlands	Gold and silver	Florin	.40,2	Gold—10 florins; silver—½, 1, and 2½ florins.
Newfoundland	Gold	Dollar	1.01,4	Gold—$2 ($2.02,7).
Peru ‖	do	Sol	.48,7	Gold—libra ($4.8665); silver—sol and divisions.
Portugal	do	Milreis	1.08	Gold—1, 2, 5, and 10 milreis.
Russia ¶	do	Ruble	.51,5	Gold—imperial ($7.718) and ½ imperial ($3.80); silver—¼, ½, and 1 ruble.
Spain	Gold and silver	Peseta	.19,3	Gold—25 pesetas; silver—5 pesetas.
Sweden and Norway.	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Switzerland	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey	Gold	Piaster	.04,4	Gold—25, 50, 100, 200, and 500 piasters.
Uruguay	do	Peso	1.03,4	Gold—peso; silver—peso and divisions.
Venezuela	Gold and silver	Bolivar	.19,3	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

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* The gold standard went into effect January 1, 1900 (see Commercial Relations, 1899, Vol. II, p. 7). Values are still sometimes expressed in the florin, which is worth 2 crowns.

† Gold standard adopted in November, 1900. (See CONSULAR REPORTS No. 225, June, 1899.)

‡ For an account of the adoption of the gold standard, see CONSULAR REPORTS No. 238, p. 359.

§ Gold standard adopted October 1, 1897. (See CONSULAR REPORTS No. 201, p. 259.)

‖ Gold standard adopted October 13, 1900.

¶ For an account of the adoption of the gold standard, see Review of the World's Commerce, 1896-97, p. 254.

B.—*Countries with fluctuating currencies, 1874–1898.*

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1874.	1878.	1883.	1888.	1889.	1890.
Austria-Hungary*.	Silver	Florin	$0.47,6	$0.45,3	$0.40,1	$0.34,5	$0.33,6	$0.42
Bolivia	do	Dollar until 1880; boliviano thereafter.	.96,5	.96,5	.81,2	.69,9	.68	.85
Central America	do	Peso	.96,5	.91,8	....	.69,9	.68	.85
China	do	Haikwan tael.	1.61	....	....	....	....	....
Colombia	do	Peso	.96,5	.96,5	.81,2	.69,9	.68	.85
Ecuador	do	do	.96,5	.91,8	.81,2	.69,9	.68	.85
Egypt †	Gold	Pound (100 piasters)	....	4.97,4	4.90	4.94,3	....	....
India	Silver	Rupee	.45,8	.43,6	.38,6	.32,2	.32,3	.40,4
Japan	Gold	Yen	.99,7	.99,7	....	.99,7	.99,7	.99,7
	Silver		....	....	.87,6	.75,3	.73,4	.91,7
Mexico	do	Dollar	1.04,75	.99,8	.88,2	.75,9	.73,9	.92,3
Netherlands‡	Gold and silver.	Florin	.40,5	.38,5	....	....	....	....
Peru	Silver	Sol	.92,5	.91,8	.81,2	.69,9	.68	.85
Russia	do	Ruble	.77,17	.73,4	.65	.55,9	.54,4	.68
Tripoli	do	Mahbub of 20 piasters.	.87,09	.82,9	.73,3	.63	.61,4	.76,7

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1891.	1892.	1893.	1894.	1896.	1898.
Austria-Hungary*.	Silver	Florin	$0.38,1	$0.34,1	....	....	....	....
Bolivia	do	Boliviano	.77,1	.69,1	$0.61,3	$0.51,6	$0.49,1	$0.42,4
Central America	do	Peso	.77,1	.69,1	.61,3	.51,6	.49,1	.41,4
Colombia	do	do	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
Ecuador	do	do	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
India	do	Rupee	.36,6	.32,8	.29,2	.24,5	.23,3	.20,1
Japan§	do	Yen	.83,1	.74,5	.66,1	.55,6	.52,9	....
Mexico	do	Dollar	.83,7	.75	.66,6	.56	.53,3	.46
Peru	do	Sol	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
Russia§	do	Ruble	.61,7	.55,3	.49,1	.41,3	.39,3	....
Tripoli	do	Mahbub of 20 piasters.	.69,5	.62.3	.55,3	.46,5	.44,3	....

* See footnote to Austria-Hungary under Table A.

† The Egyptian pound became fixed in value at $4.94,3 in 1887.

‡ The Netherlands florin fluctuated up to the year 1880, when it became fixed at 40.2 cents.

§ See footnote, table of fixed currencies.

C.—*Quarterly valuations of fluctuating currencies.*

Countries.	Monetary unit.	1900.				1901.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia	Silver boliviano.	$0.42,7	$0.43,6	$0.43,8	$0.45,1	$0.46,8	$0.45,1	$0.43,6	$0.42,8
Central America.	Silver peso	.42,7	.43,6	.43,8	.45,1	.46,5	.45,1	.43,6	.42,8
China	Amoy tael	.69,1	.70,5	.70,9	.72,9	.75,7	.72,9	.70,5	.69,1
	Canton tael	.68,9	.70,3	.70,7	.72,7	.75,5	.72,7	.70,3	.68,9
	Chefoo tael	.66,1	.67,4	.67,8	.69,7	.72,4	.69,7	.67,4	.66,1
	Chinkiang tael	.67,5	.68,8	.69,3	.71,2	.74	.71,2	.68,8	.67,5
	Fuchau tael	.64	.65,2	.65,6	.67,4	.70,1	.67,5	.65,2	.64
	Haikwan tael	.70,3	.71,7	.72,1	.74,2	.77,1	.74,2	.71,7	.70,4
	Hankau tael	.64,7	.65,9	.66,3	.68,2	.70,9	.68,2	.65,9	.64,7
	Hongkong tael	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)
	Ningpo tael	.66,5	.67,7	.68,2	.70,1	.72,8	.70,1	.67,8	.66,5
	Niuchwang tael.	.64,8	.66,1	.66,5	.68,4	.72	.68,4	.66,1	.64,8
	Shanghai tael	.63,1	.64,4	.64,8	.66,6	.69,2	.66,6	.64,4	.63,2
	Swatow tael	.63,9	.65,1	.65,5	.67,4	.70	.67,4	.65,1	.63,9
	Takao tael	.69,6	.70,9	.71,4	.73,4	.76,2	.73,4	.70,9	.69,6
	Tientsin tael	.67	.68,3	.68,7	.70,7	.73,4	.70,7	.68,3	.67
Colombia	Silver peso	.42,7	.43,6	.43,8	.45,1	.46,8	.45,1	.43,6	.42,8
Ecuador †	do								
India	Silver rupee‡	.20,3	.20,7	.20,8					
Mexico	Silver dollar	.46,4	.47,3	.47,6	.49	.50,9	.49	.49	.46,4
Persia	Silver kran	.07,9	.08	.08,1	.08,3	.08,6	.08,3	.08,3	.07,9
Peru †	Silver sol	.42,7	.43,6	.43,8	.48,7				

Countries.	Monetary unit.	1902.				1903.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia	Silver boliviano.	$0.41,3	$0.40,3	$0.38,2	$0.38,4	$0.36,1	$0.35,2	$0.38,4	$0.40,8
Central America	Silver peso	.41,3	.40,3	.38,2	.38,4	.36,1	.35,2	.38,4	.40,8
China	Amoy tael	.66,9	.65,1	.61,8	.62	.58,4	.57	.62,2	.65,9
	Canton tael	.66,7	.64,9	.61,7	.61,9	.58,2	.56,8	.62	.65,7
	Chefoo tael	.63,9	.62,3	.59,1	.59,3	.55,8	.54,5	.59,5	.63
	Chinkiang tael	.65,3	.63,6	.60,4	.60,6	.57	.55,7	.60,7	.64,4
	Fuchau tael	.61,8	.60,2	.57,2	.57,4	.54	.52,7	.57,5	.61
	Haikwan tael	.68	.66,3	.62,9	.63,1	.59,4	.58	.63,3	.67,1
	Hankau tael	.62,6	.60,9	.57,9	.58	.54,6	.53,3	.58,2	.61,7
	Hongkong tael	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)
	Nankin tael								.65,2
	Ningpo tael	.64,3	.62,6	.59,5	.59,6	.56,1	.54,8	.58,3	.63,4
	Niuchwang tael.	.62,7	.61,1	.58	.58,2	.53,3	.53,4	.59,8	.61,8
	Peking tael								.64,3
	Shanghai tael	.61,1	.59,5	.56,5	.56,7	.53,9	.52	.56,8	.60,2
	Swatow tael	.61,8	.60,2	.57,1	.57,3	.58,8	.52,6	.57,5	.60,9
	Takao tael	.67,3	.65,5	.62,2	.62,4	.56,6	.57,3	.62,6	.66,3
	Tientsin tael	.64,8	.63,1	.59,9	.60,1	.60,1	.55,2	.60,3	.63,9
Colombia	Silver peso	.41,3	.40,3	.38,2	.38,4	.36,1	.35,2	.38,4	.40,8
Mexico	Silver dollar	.44,9	.43,7	.41,5	.41,7	.39,2	.38,3	.41,8	.44,3
Persia	Silver kran	.07,6	.07,4	.07	.07,1	.06,6	.06,5	.07,1	.07,5

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* The "British dollar" has the same legal value as the Mexican dollar in Hongkong, the Straits Settlements, and Labuan.

† See footnote, table of fixed currencies.

‡ The sovereign is the standard coin of India, but the rupee is the money of account. See also table of fixed currencies.

FOREIGN WEIGHTS AND MEASURES.

The following table embraces only such weights and measures as are given from time to time in CONSULAR REPORTS and in Commercial Relations:

Foreign weights and measures, with American equivalents.

Denominations.	Where used.	American equivalents.
Almude	Portugal	4.422 gallons.
Ardeb	Egypt	7.6907 bushels.
Are	Metric	0.02471 acre.
Arobe	Paraguay	25 pounds.
Arratel or libra	Portugal	1.011 pounds.
Arroba (dry)	Argentine Republic	25.3175 pounds.
Do	Brazil	32.38 pounds.
Do	Cuba	25.3664 pounds.
Do	Portugal	32.38 pounds.
Do	Spain	25.36 pounds.
Do	Venezuela	25.4024 pounds.
Arroba (liquid)	Cuba, Spain, and Venezuela	4.263 gallons.
Arshine	Russia	28 inches.
Arshine (square)	do	5.44 square feet.
Artel	Morocco	1.12 pounds.
Baril	Argentine Republic and Mexico	20.0787 gallons.
Barrel	Malta (customs)	11.4 gallons.
Do	Spain (raisins)	100 pounds.
Batman or tabriz	Persia	6.49 pounds.
Berkovets	Russia	361.12 pounds.
Bongkal	India	832 grains.
Bouw	Sumatra	7,096.5 square meters.
Bu	Japan	0.1 inch.
Butt (wine)	Spain	140 gallons.
Caffiso	Malta	5.4 gallons.
Candy	India (Bombay)	529 pounds.
Do	India (Madras)	500 pounds.
Cantar	Morocco	113 pounds.
Do	Syria (Damascus)	575 pounds.
Do	Turkey	124.7036 pounds.
Cantaro (cantar)	Malta	175 pounds.
Carga	Mexico and Salvador	300 pounds.
Catty	China	1.333⅓ (1⅓) pounds.
Do*	Japan	1.31 pounds.
Do	Java, Siam, and Malacca	1.35 pounds.
Do	Sumatra	2.12 pounds.
Centaro	Central America	4.2631 gallons.
Centner	Bremen and Brunswick	117.5 pounds.
Do	Darmstadt	110.24 pounds.
Do	Denmark and Norway	110.11 pounds.
Do	Nuremberg	112.43 pounds.
Do	Prussia	113.44 pounds.
Do	Sweden	93.7 pounds.
Do	Vienna	123.5 pounds.
Do	Zollverein	110.24 pounds.
Do	Double or metric	220.46 pounds.
Chetvert	Russia	5.7748 bushels.
Chih	China	14 inches.

*More frequently called "kin." Among merchants in the treaty ports it equals 1.33⅓ pounds avoirdupois.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Coyan	Sarawak	3,098 pounds.
Do	Siam (Koyan)	2,667 pounds.
Cuadra	Argentine Republic	4.2 acres.
Do	Paraguay	78.9 yards.
Do	Paraguay (square)	8.077 square feet.
Do	Uruguay	Nearly 2 acres.
Cubic meter	Metric	35.3 cubic feet.
Cwt. (hundredweight)	British	112 pounds.
Dessiatine	Russia	2.6997 acres.
Do	Spain	1.599 bushels.
Drachme	Greece	Half ounce.
Egyptian weights and measures	(*See* CONSULAR REPORTS No. 144.)	
Fanega (dry)	Central America	1.5745 bushels.
Do	Chile	2.575 bushels.
Do	Cuba	1.599 bushels.
Do	Mexico	1.54728 bushels.
Do	Morocco	Strike fanega, 70 pounds; full fanega, 118 pounds.
Do	Uruguay (double)	7.776 bushels.
Do	Uruguay (single)	3.888 bushels.
Do	Venezuela	1.599 bushels.
Fanega (liquid)	Spain	16 gallons.
Feddan	Egypt	1.03 acres.
Frail (raisins)	Spain	50 pounds.
Frasco	Argentine Republic	2.5096 quarts.
Do	Mexico	2.5 quarts.
Frasila	Zanzibar	35 pounds.
Fuder	Luxemburg	264.17 gallons.
Funt	Russia	0.9028 pound.
Garnice	Russian Poland	0.88 gallon.
Gram	Metric	15.432 grains.
Hectare	do	2.471 acres.
Hectoliter:		
Dry	do	2.838 bushels.
Liquid	do	26.417 gallons.
Joch	Austria-Hungary	1.422 acres.
Ken	Japan	6 feet.
Kilogram (kilo)	Metric	2.2046 pounds.
Kilometer	do	0.621376 mile.
Klafter	Russia	216 cubic feet.
Koku	Japan	4.9629 bushels.
Korree	Russia	3.5 bushels.
Kwan	Japan	8.28 pounds.
Last	Belgium and Holland	85.134 bushels.
Do	England (dry malt)	82.52 bushels.
Do	Germany	2 metric tons (4,480 pounds).
Do	Prussia	112.29 bushels.
Do	Russian Poland	11⅜ bushels.
Do	Spain (salt)	4,760 pounds.
League (land)	Paraguay	4,633 acres.
Li	China	2,115 feet.
Libra (pound)	Argentine Republic	1.0127 pounds.
Do	Central America	1.043 pounds.
Do	Chile	1.014 pounds.
Do	Cuba	1.0161 pounds.
Do	Mexico	1.01465 pounds.
Do	Peru	1.0143 pounds.
Do	Portugal	1.011 pounds.
Do	Spain	1.0144 pounds.
Do	Uruguay	1.0143 pounds.
Do	Venezuela	1.0161 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Liter	Metric	1.0567 quarts.
Livre (pound)	Greece	1.1 pounds.
Do	Guiana	1.0791 pounds.
Load	England (timber)	Square, 50 cubic feet; unhewn, 40 cubic feet; inch planks, 600 superficial feet.
Manzana	Costa Rica	1⅜ acres.
Do	Nicaragua and Salvador	1.727 acres.
Marc	Bolivia	0.507 pound.
Maund	India	$82\frac{2}{7}$ pounds.
Meter	Metric	39.37 inches.
Mil	Denmark	4.68 miles.
Do	Denmark (geographical)	4.61 miles.
Milla	Nicaragua and Honduras	1.1493 miles.
Morgen	Prussia	0.63 acre.
Oke	Egypt	2.7225 pounds.
Do	Greece	2.84 pounds.
Do	Hungary	3.0817 pounds.
Do	Turkey	2.82838 pounds.
Do	Hungary and Wallachia	2.5 pints.
Pic	Egypt	21¼ inches.
Picul	Borneo and Celebes	135.64 pounds.
Do	China, Japan, and Sumatra	133⅓ pounds.
Do	Java	135.1 pounds.
Do	Philippine Islands.	137.9 pounds.
Pie	Argentine Republic	0.9478 foot.
Do	Spain	0.91407 foot.
Pik	Turkey	27.9 inches.
Pood	Russia	36.112 pounds.
Pund (pound)	Denmark and Sweden	1.102 pounds.
Quarter	Great Britain	8.252 bushels.
Do	London (coal)	36 bushels.
Quintal	Argentine Republic	101.42 pounds.
Do	Brazil	130.06 pounds.
Do	Castile,* Chile, Mexico, and Peru	101.41 pounds.
Do	Greece	123.2 pounds.
Do	Newfoundland (fish)	112 pounds.
Do	Paraguay	100 pounds.
Do	Syria	125 pounds.
Do	Metric	220.46 pounds.
Rottle	Palestine	6 pounds.
Do	Syria	5¼ pounds.
Sagene	Russia	7 feet.
Salm	Malta	490 pounds.
Se	Japan	0.02451 acres.
Seer	India	1 pound 13 ounces.
Shaku	Japan	11.9305 inches.
Sho	do	1.6 quarts.
Standard (St. Petersburg)	Lumber measure	165 cubic feet.
Stone	British	14 pounds.
Suerte	Uruguay	2,700 cuadras (see cuadra).
Sun	Japan	1.193 inches.
Tael	Cochin China	590.75 grains (troy).
Tan	Japan	0.25 acre.
To	do	2 pecks.
Ton	Space measure	40 cubic feet.
Tonde (cereals)	Denmark	3.94783 bushels.
Tondeland	do	1.36 acres.

*Although the metric weights are used officially in Spain, the Castile quintal is employed in commerce in the Peninsula and colonies, save in Catalonia; the Catalan quintal equals 91.71 pounds.

Foreign weights and measures, with American equivalents—**Continued.**

Denominations.	Where used.	American equivalents.
Tsubo	Japan	6 feet square.
Tsun	China	1.41 inches.
Tunna	Sweden	4.5 bushels.
Tunnland	Sweden	1.22 acres.
Vara	Argentine Republic	34.1208 inches.
Do	Central America	32.87 inches.
Do	Chile and Peru	33.367 inches.
Do	Cuba	33.384 inches.
Do	Curaçao	33.375 inches.
Do	Mexico	33 inches.
Do	Paraguay	34 inches.
Do	Spain	0.914117 yard.
Do	Venezuela	33.384 inches.
Vedro	Russia	2.707 gallons.
Vergees	Isle of Jersey	71.1 square rods.
Verst	Russia	0.663 mile.
Vlocka	Russian Poland	41.98 acres.

METRIC WEIGHTS AND MEASURES.

Metric weights.

Milligram ($\frac{1}{1000}$ gram) equals 0.0154 grain.
Centigram ($\frac{1}{100}$ gram) equals 0.1543 grain.
Decigram ($\frac{1}{10}$ gram) equals 1.5432 grains.
Gram equals 15.432 grains.
Decagram (10 grams) equals 0.3527 ounce.
Hectogram (100 grams) equals 3.5274 ounces.
Kilogram (1,000 grams) equals 2.2046 pounds.
Myriagram (10,000 grams) equals 22.046 pounds.
Quintal (100,000 grams) equals 220.46 pounds.
Millier or tonnea—ton (1,000,000 grams) equals 2,204.6 pounds.

Metric dry measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.061 cubic inch.
Centiliter ($\frac{1}{100}$ liter) equals 0.6102 cubic inch.
Deciliter ($\frac{1}{10}$ liter) equals 6.1022 cubic inches.
Liter equals 0.908 quart.
Decaliter (10 liters) equals 9.08 quarts.
Hectoliter (100 liters) equals 2.838 bushels.
Kiloliter (1,000 liters) equals 1.308 cubic yards.

Metric liquid measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.0338 fluid ounce.
Centiliter ($\frac{1}{100}$ liter) equals 0.338 fluid ounce.
Deciliter ($\frac{1}{10}$ liter) equals 0.845 gill.
Liter equals 1.0567 quarts.
Decaliter (10 liters) equals 2.6418 gallons.
Hectoliter (100 liters) equals 26.417 gallons.
Kiloliter (1,000 liters) equals 264.18 gallons.

Metric measures of length.

Millimeter ($\frac{1}{1000}$ meter) equals 0.0394 inch.
Centimeter ($\frac{1}{100}$ meter) equals 0.3937 inch.
Decimeter ($\frac{1}{10}$ meter) equals 3.937 inches.

Meter equals 39.37 inches.
Decameter (10 meters) equals 393.7 inches.
Hectometer (100 meters) equals 328 feet 1 inch.
Kilometer (1,000 meters) equals 0.62137 mile (3,280 feet 10 inches).
Myriameter (10,000 meters) equals 6.2137 miles.

Metric surface measures.

Centare (1 square meter) equals 1,550 square inches.
Are (100 square meters) equals 119.6 square yards.
Hectare (10,000 square meters) equals 2.471 acres.

MONTHLY CONSULAR REPORTS.

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CUBA.

(Annual report of the United States consul-general at Habana for 1903.)

GEOGRAPHICAL AND PHYSICAL FEATURES.

Situation.—The island of Cuba, the largest and most westerly of the Antilles Archipelago, is situated in the Torrid Zone, between North and South America, at the entrance of the Gulf of Mexico. The island is long, narrow, and curved, the convexity being to the north. The most northern portion lies between Habana and Cardenas and the most southern between Capes Maisi and Cruz.

It is bounded north by the sea, which separates it from Florida and the Bahama Islands; east, by the Strait of Maisi, or of the "Winds," separating it from the island of Haiti; south, by the Caribbean Sea; and west and northwest, by the Strait of Yucatan and the Gulf of Mexico. It is situated at a distance of 170 kilometers (105.6 miles) from Florida, 77 kilometers (47.8 miles) from Haiti, 140 kilometers (87 miles) from Jamaica, and 200 kilometers (124 miles) from Yucatan.

Length.—The length of the island is 1,594 kilometers (990.4 miles) from Cape San Antonio to Cape Maisi.

Width.—Its greatest width (191 kilometers, or 118.68 miles) is in a line drawn from Cape Lucrecia to Cape Cruz, in the Province of Santiago de Cuba, and the narrowest portion (29 kilometers, or 16.02 miles) is from the Port of Mariel to Majana Cove, in the Province of Pinar del Rio.

Area.—The surface of the island is 118,832 square kilometers (45,896 square miles).

Coasts.—The perimeter of the island, following the less tortuous line of its coasts, is 2,459 kilometers (1,528 miles), of which 1,183 kilometers (735 miles) correspond to the north coast and 1,276 kilometers (793 miles) to the south coast. Some parts of the coast abound in small islands, keys, and shoals, which are dangerous to navigation. Nevertheless, between these keys and shoals exist passages of long spaces of calm sea, which facilitate the coast-navigation trade. Along the coasts, mainly the south coast, exists a belt or zone of lowlands, forming marshes, which prevent communication with said coasts during the rainy season.

Ports.—Notwithstanding this, and the fact that a great portion of the coasts is surrounded by rocks and banks of sand, there are many safe ports, viz:

NORTH COAST.

Province of Pinar del Rio.—Bahia Honda, Cabañas, and Mariel.
Province of Habana.—Habana.
Province of Matanzas.—Matanzas and Cardenas.
Province of Santa Clara.—Isabela de Sagua and Caibarien.
Province of Puerto Principe.—Nuevitas and Nuevas Grandes.
Province of Santiago de Cuba.—Gibara, Banes, Bahia de Nipe, Sagua de Tanamo, and Baracoa.

SOUTH COAST.

Province of Pinar del Rio.—La Coloma.
Province of Habana.—Batabano.
Province of Santa Clara.—Cienfuegos, Casilda, and Tunas de Zaza.
Province of Puerto Principe.—Jucaro and Santa Cruz.
Province of Santiago de Cuba.—Manzanillo, Santiago de Cuba, and Guantanamo.

Mountains.—Cuba is generally mountainous, although vast tracts of level ground and fertile valleys exist, such as the Yumurí, in Matanzas, San Luis, in Trinidad, and in Guantanamo, where a number of important sugar plantations are situated. The highest mountains are found in the Provinces of Santiago de Cuba and Santa Clara, and next to these in elevation are those in the Province of Pinar del Rio, greatly decreasing in Matanzas and Habana Provinces.

Rivers.—The rivers of Cuba, owing to the narrowness of the island and to the mountains rising in the center, are short, flowing to the north and to the south. Those flowing to the north are the shortest. The largest rivers of the island are found in the Provinces of Santa Clara and Santiago de Cuba. The largest of all, the Cauto, is 180 miles long.

The principal rivers in each Province are:

NORTH COAST.

Province of Pinar del Rio.—Cuadiana, Salado, Santa Lucia ó Malas Aguas, Mantua, Pan de Azuicar, Rosario, Santiago, Dominica, and Rio Blanco.
Province of Habana.—Almendares, Jaimanita, Cojimar, and Jaruco.
Province of Matanzas.—Yumurí, San Juan, Canimar, Jucaro, and La Palma.

Province of Santa Clara.—Sierra Morena, Carahatas, Sagua la Grande, Sagua la Chica, Caunao, and Jatibonica del Norte.

Province of Puerto Principe.—Chambas ó Los Perros, Caunado, Maximo, and Nuevitas.

Province of Santiago de Cuba.—Gibara, Tenemo, Sagua de Tanamo, Nibujon, and Toa.

SOUTH COAST.

Province of Pinar del Rio.—Cuyaguateje, San Juan y Martinez, Coloma, Rio Hondo, San Diego, and Los Palacios.

Province of Habana.—Caimito, Rosario, and Mayabeque.

Province of Matanzas.—Hanabana and Hatiguanico.

Province of Santa Clara.—Damuji, Arimao, Caunao, Salado, Cuarabo ó Tayaba, Agabama ó Manati, Tayabacoa, Zaza, and Jatibonico del Sur.

Province of Puerto Principe.—Vertientes, San Pedro ó Santa Clara, Santa Cruz del Sur, Sevilla, and Tana.

Province of Santiago de Cuba.—Cauto, Gua, Yara, Jibacoa, Guantanamo, and Yateras.

Climate.—The climate of the island is hot throughout the year, although tempered in summer by the breeze blowing constantly from the first quadrant, from 10 or 11 a. m. till sunset, and also by the rainfall from May to November. The mean temperature in the hottest months is 28° to 29° C. (82.5° to 84° F.) and the coldest 17° C. (69.8° F.) in Habana. The highest temperature marked by the centigrade thermometer in the shade is commonly 30° to 31° (83° to 85° F.), although sometimes the mercury goes up as high as 34° C. (93° F.).

Rainfall.—The pluviometer has reached the height of 2.25 meters (88.58 inches).

Hurricanes.—The hurricanes are not so frequent in this island as in the other West Indies, but when they occur they are violent and disastrous, as the remarkable ones of the years 1774, 1844, 1846, 1865, 1870, 1876, 1885, and 1894.

Earthquakes.—Earthquakes occur, but not often, in the eastern portion of the island, especially in the district of Santiago de Cuba, some of them of great intensity and duration, as those of the years 1776, 1842, and 1852, all causing great damage.

Population.—The density or relative population of Cuba is nearly the same as that of the United States. If, therefore, as has been stated by high authorities, there is room for 1,000,000,000 inhabitants in the United States without overcrowding, it follows that in Cuba there is room for nearly 13,000,000.

MINERAL RESOURCES.

There is not at present sufficient knowledge regarding the real mineral richness of the island to form an exact opinion or to make an accurate estimate of the same. In former times, the mines were profitably worked. The industry afterwards was totally stopped, owing to the abnormal circumstances in which the island remained during many years. The benefits of peace are giving new vigor to this enterprise, judging from the great number of petitions for concessions filed in the offices of the civil governors of Provinces.

The mineral resources of the island are represented by the following products: Gold, silver, iron, copper, manganese, lead, asphalt, petroleum, naphtha, graphite, amianthus, zinc, mercury, and, it is stated, coal. These minerals are found in most of the Provinces, but the richest mineral district is the Province of Santiago de Cuba, followed in importance by Santa Clara, Puerto Principe, Pinar del Rio, Matanzas, and Habana.

Concessions.—The following statement of the existing mining concessions in the different Provinces will give an idea of the importance of the mineral interests of the island, and the list will be increased when exact and complete statistical data can be obtained:

Province.	Mines.	Area.	
	Number.	*Hectares.*	*Acres.*
Santiago de Cuba	386	18,051	44,586
Santa Clara	59	1,736	4,288
Puerto Principe	27	2,106	5,202
Pinar del Rio	13	551	1,361
Matanzas	11	180	444
Habana	10	208	514
Total	506	22,832	56,395

Of this number of mines, very few of iron, manganese, and copper in the Province of Santiago de Cuba are in operation. The others can be considered only as concessions waiting for funds for exploitation. The administration, according to the laws in force, can not compel the miners to operate their claims. The owner is in possession of his mine in perpetuity, and at his own will may work it or not. The only cause of forfeiture established by the law is the failure to pay the annual taxes.

The applicants for mines can, according to law, ask for one or several claims at the same time. A claim (pertenencia) is 300 meters (984 feet) long by 200 meters (656 feet) wide (6 hectares, or 14.8 acres), except when the mines are iron, coal, anthracite, lignite, turf, asphalt, or bituminous clays, when the pertenencia is 500 meters (1,640 feet) long and 300 meters (984 feet) wide (15 hectares, or 37 acres).

Taxes.—The taxes to be paid to the Government are $5 yearly per hectare (2.471 acres), or $30 for each claim containing 6 hectares (14.8 acres), when the mines are of precious stones or metalliferous substances.

In the other cases, the tax is $2 per hectare (2.471 acres), and therefore the total to be paid for the pertenencia may be $12 or $30, according to the surface of the claim.

PUBLIC LANDS.

Extent.—The following statement shows the extent of the public lands, as far as statistics can be obtained, and also of the forests:

Province.	Area.	
	Hectares.	*Acres.*
Santiago de Cuba	175,200	432,744
Puerto Principe	2,586	6,387
Santa Clara	9,181	22,677
Total	186,967	461,808

Condition.—In regard to the condition in which these public lands are, it must be stated that the limits or boundaries are not fixed, and in consequence they have not been entered in the registry of property (Registro de la Propiedad).

These lands are covered with forests, and as most of them are situated in the interior of the island no availments can be made, owing to the absence of roads. Some of the public lands under the care of the Department of Finance are rented and other portions have been ceded to private parties in consideration of an annual tribute of 5 per cent of the value assigned to each caballeria (33 acres).

Old concessions.—When Spain took possession of the island of Cuba large portions of lands were ceded to the Spanish settlers with the object of promoting the breeding of cattle of every kind. These concessions were called "mercedes" and were granted by the municipalities from the year 1550 to 1729, when further grants were prohibited. At first the geometric form and the surface of the lands ceded were unknown, the word "sabana" being used to express the concession of the land granted for breeding large cattle and the word "sitio" for those granted for breeding swine and other minor animals.

In 1579 it was agreed to fix the boundaries of these lands, and the circular form was adopted, allowing a radius of 1 Cuban league to the "corral" (421⅛ caballerias, or 5,651 hectares=13,958 acres) and 2 leagues to the radius of the "hato" (1,684½ caballerias, or 22,606 hectares=55,837 acres). The names "hato" and "corral" were substituted for "sabana" and "sitio."

FORESTS AND FOREST TREES.

The area of the public forests of the island of Cuba, it can be assured, is not less than 37,000 caballerias, or 496,540 hectares (1,226,454 acres), existing in the several Provinces into which the island is actually subdivided. The most important Provinces in this respect are Santiago de Cuba and Santa Clara. In the aforementioned area are included the forest of the littoral and those on the isles and keys surrounding the island, the main production of which is wood for fuel and bark and leaves of the red mangrove; also "pataban," used for tanning purposes. The timber forests of the property of the municipality of Jiguani, with an area of 46,759 hectares (115,591 acres), have also been included, as they are considered public forests.

Following is a statement of the public forests in each Province:

Province.	Area.	
	Hectares.	*Acres.*
Santiago de Cuba	210,200	519,194
Santa Clara	124,660	307,910
Pinar del Rio	60,000	148,200
Matanzas	46,000	113,620
Puerto Principe	35,680	88,130
Habana	20,000	49,400
Total	496,540	1,226,454

The names and the applicability of the trees are as follows:

FOR CONSTRUCTION.

Common name.	Technical name.
Acana	Bassia albescens.
Almendro	Laplacea curtyana.
Arabo	Erytroxlium obovatum.
Agua amarilla	Zanthoxylum bombacifolium.
Baria	Cordia gerascanthoides.
Carne de doncella	Byrsonima lucida.
Caoba	Switenia mahagoni.
Cedro	Cedrela odorata.
Cocuyo	Bumelia nigra.
Cuajani	Cerasus occidentalis.
Chicharron prieto	Chuncoa abovate.
Dagame	Calicophyllum candidisimum.
Fustete	Maclura tintorea.
Guao de costa	Rhus metopium.
Frijolillo amarillo	Lenchocarpus tatifolius.
Guaguasi	Casearia totiodes.
Guayacan	Guajatum officinale.
Jaimiqui	Byrsomina lucida.
Jamaquey	Belaira mucronata.
Jiqui de costa	Malphigia obovata.
Jocuma priete	Syderoxylon mastichodrendon.
Jucaro prieto	Busida capitata.
Maboa	Cameraria latifolia.
Majagua	Hibiscus tiliacens.
Moruro de costa	Acacia littoralis.
Ouibra hacha	Copaifera hymenofolia.
Roble real	Tecoma longiflora.
Sabicu	Lysiloma sabico.
Tengue	Poeppigia procera.
Yaba	Andira inermis.
Yaiti	Excocaria lucida.
Yaya	Guatteria virgata.

FOR TANNING.

Common name.	Technical name.
Los guayabos	Psidum.
Maranon	Anacardium occidentalis.
Moruro de sabana	Petophorum adriatum.
Peralejo de sabana	Byrsoninia crassifolia.
Mangle colorado	Phizophora mangle.
Mangle blanco	Avicennia nitida.
Encina	Quercus virens.
Pataban	Lagunicularia racemosa.

DYEWOODS.

Fustete	Matlura tinctoria.
Bija ó achiote	Bixa arellana.
Brazil colorado	Casalpinia crista.
Brazilete	Coulteria tintoria.
Peralejo de monte	Byrsonima cubensis.

OIL WOODS.

Coco	Cocos mucifera.
Corojo	Cocos crispa.
Piñon	Erythrina corrallodudron.
Mamey colorado	Lucuma bomplandi.
Aguacate	Persea gratissima.
Encina	Quercus virens.

FIBER WOODS (USED FOR CORDAGE).

Daquilla	Lagetta lintearia.
Guara comun	Cupania tormentosa.
Majagua	Hibiscus tiliaceus.
Majaguilla	Pavonia racesnosa.
Guama comun	Louchocarpus pyxidanius.
Guacacoa	Daphnopsis cubensis.
Corojo	Cocos crispa.

GUM AND RESIN WOODS.

Almacigo	Bursera gummifera.
Ciruelo	Spondias lutea.
Cedro	Cedrela odorata.
Copal	Voica copal.
Guaguasi	Caseria lotiodes.
Manaju	Rheedia aristata.
Copey	Clusia rosea.
Abey hembra	Papigia excelsa.
Maboa	Cameraria latifolia.
Mango	Mangifera indica.
Marañon	Anacardium occidentale.
Mamey amarillo	Mammea americana.
Pino	Pinus occidentale.
Yaba	Andira inermis.

Fruit trees, etc.—Besides the enumerated species, whose uses have been expressed and which are the most important known, there are about fifty different species of fruit trees and a great number of trees used for fuel, fencing, carpentry, and cabinetwork.

It might be of great advantage to manufacturers of the United States to give this matter careful consideration.

SOIL AND PRODUCTS BY PROVINCES.

Province of Pinar del Rio.—The lands of this Province differ greatly in their formation; the Quaternaries are found forming two bands or zones, one to the north and the other to the south, excepting the piece of land pertaining to Cape Corrientes. The southern band is a great deal wider than the northern. The portion of this Province between longitude 78° and 79° west San Fernando, Spain, is absolutely of the same post-Tertiary formation. These lands are limited by the coasts and, generally speaking, are low and marshy; they are used chiefly for raising cattle and swine, as well as for the manufacture of charcoal and the gathering of leaves and bark of the red mangrove.

The lands of the Tertiary formation are also found in two strips parallel to the above mentioned. They are considered first class for the culture of tobacco, owing to their arenaceous, argillo-calcareous, humiferous composition, principally in the southern part of the Province (municipalities of Guane, San Juan y Martinez, San Luis, Consolacion del Sur), where the Vuelta Abajo Vegas of world-wide fame are located.

To lands of the Secondary period pertain all the central highlands of the Province. On the summit of these mountains small spaces of igneous soil, mostly composed of serpentine rocks, are found. These lands are generally of bad quality. Some coffee grows on them, but their principal product are feed for cattle, timber for construction, and wood for making charcoal. This portion of land is the most mountainous of the Province.

To the southwest of the Organos Ridge exists a zone pertaining to the Primitive formation, covered by woods almost in its total area.

The principal products of the Province are tobacco, sugar cane, coffee, timber, charcoal, and cattle.

Province of Habana.—The soil of the Quaternary period is found in all the south coast littoral and in a small portion of the north coast, east of Habana.

The lands of the Tertiary formation are located in the southern and western portion of the Province adjoining the zones of the Quaternary formation, although the strips are rather narrow. In the municipalities of Alquizar and Guira de Melena, situated in the southwest section of the Province, tobacco of very good quality, called "de partido," is cultivated, and also coffee, bananas, sugar cane, and oranges. The soil in this part of the Province is red.

The dark soil of the municipalities of Guines, Melena del Sur, Nueva Paz, and San Nicolas on the south coast, to the east, produce sugar cane, and in Guines also potatoes, and enough vegetables of every kind to supply the Habana markets.

The arenose-argillo-calcareous lands of the municipality of Bauta, to the west of Habana, are first class for cultivating white and violet pineapples.

The lands of the Secondary period form a strip beginning south of the city of Habana and running east to the limits of Matanzas. In this zone are located parts of the municipalities of Madruga, Tapaste, Santa Maria del Rosario, Casiguas, and others.

Only a small portion of igneous soil can be found in the municipality of Guanabacoa, to the east of Habana.

The principal productions of the Province are sugar cane, alcohol, tobacco, pineapples, "yucca" starch, some coffee, bananas, corn, vegetables of every kind, and other produce.

Province of Matanzas.—The Quaternary formations are found in the shape of narrow strips, running along the north coast from the Bay of Matanzas to the limits of Santa Clara Province and along the south coast of the Province.

The lands of the Tertiary formation are situated on the west side of Matanzas, running in said direction to the limits of Habana Province; in the central and southern part of the Province, to the Zapata swamps and limits of Santa Clara.

The red soil of the municipalities of Jovellanos, Guira de Macurijes, Cervantes (formerly Perico), Bolondron, and La Union are considered of the very best kind for cultivating sugar cane, coffee, oranges, bananas, sweet potatoes, "ñame," "yucca," corn, etc. The soil of the municipalities of Alacranes, Jaguey Grande, Guanajayabo, and Guamacaro are of argillo-arenose-calcareous humiferous composition, of dark or brown color, in some instances rather humid, but of thick vegetable coat. It is good for the cultivation of sugar cane.

The lands of the Secondary formations are situated in the central highlands of this region, forming a zone running from the west of the village of Colon nearly to the municipality of Union de Reyes.

The igneous soils are located in the center of the Secondary zone, forming narrow strips, which begin at Colon and end at Union de Reyes.

The parts of this Province pertaining to the municipalities of

Camarrones and San José de los Ramos are extensively flooded during heavy rainy seasons on account of the swelling of the rivers through or near by said districts.

The principal products of the Province are sugar cane, alcohol, and timber.

Province of Santa Clara.—The soil of the Quaternary formation extends from the limits of the Matanzas Province to the north of Sagua la Chica River, on the north coast, and to Cienfuegos, on the south coast.

The lands of the Tertiary formation are found in the northern part of the Province, from Sagua la Chica River to the limits of the Province of Puerto Principe, forming a wide zone extending westward to the Province of Matanzas. In this zone are located, in part, the municipalities of Yaguajay, Remedios, Taguayabon, Vueltas, Camajuani, and Sagua. On the south coast they form a narrow strip, beginning at the port of Cienfuegos and ending in the Province of Puerto Principe. This zone becomes wider in the central region of the Province, occupying a considerable extent of land. The municipalities of Trinidad and Sancti Spiritus are situated in this zone. Soil of the same formation, occupied by the municipalities of Cartagena and Santa Isabel de las Lajas, can be found in the western portion of the Province.

The lands of the Secondary period form two irregular bands joining in the west. Lands of this formation, although occupying a small area, can be found to the north of Cienfuegos port, in the place where the municipality of Camarones is situated.

Soil of the Primitive formation can be found on the east side of the Arimao River, extending to the north slope of the Siguanea. The renowned Manicaragua Vegas are located on this formation.

The principal products of the Province are sugar cane, tobacco, coffee, cocoa, corn, bananas, honey, wax, timber, alcohol, cattle, charcoal, and bark and leaves for tanning.

Province of Puerto Principe.—Soil of the Quaternary period extends in a narrow strip in the northern part of the Province and also on the south coast from the port of Santa Cruz to Santiago de Cuba. Lands of this kind can be found also at the mouth of the River Santa Clara.

Lands of the Tertiary formation form two parallel zones, one in the north and the other in the south portion of the Province. The municipalities of Moron, Nuevitas, Ciego de Avila, and Santa Cruz are located in said zones.

The principal products of the Province are cattle, sugar cane, wax, honey, and timber.

Province of Santiago de Cuba.—Soil of the Quaternary formation exists in the northern part of the Province, extending to Mangle Point; in the south it extends from Cape Cruz in the western direction to the limits of the Province of Puerto Principe, and, again, from Puerto Escondido to Cape Maisi.

Lands of the Tertiary period exist all along the south coast, excepting the portions from Puerto Escondido to Maisi, which are, as stated, of the Quaternary formation. The towns of Piedras, Jiguani, Barajagua, and Mayari are situated on this kind of soil, as are also San Pedro, San Marcos, and the municipality of Gibara.

Lands of the Secondary formation occupy the southern part of the Province, from Cape Cruz to Guantanamo and thence to the northeast to the mountains of Toa. This is the richest mineral region in the Province.

Lands of the Primitive formation are found only to the northeast of the port of Manati, and in a limited district.

Igneous soil forms a wide zone embracing the municipalities of Bayamo, Holguin, and Victoria de las Tunas; all the northern slope of the Sierra Maestra is also of the same kind of soil, being crossed by strips of the Secondary formation.

The principal products of the Province are minerals, coffee, sugar cane, tobacco, cocoa, wax, honey, cocoanuts, bananas, and timber.

PLANTATIONS AND FARMS.

Sugar plantations.—It is only a few years since the sugar industry was separated from agriculture in most of the large plantations, called "centrales." Considerable increase in the sugar production was the result, owing to the reasonable and methodic subdivision of labor.

The industrial process for the manufacture of sugar was greatly improved during the years preceding the invasion of the western Provinces by the forces of the revolution initiated in February, 1895, in the eastern region of the island. With few exceptions, the centrales were furnished with furnaces for burning green bagasse as fuel; machinery of great power, mills of large dimensions, regrinders, defibrators, and defacators were established; improvements were made for the purpose of maintaining the juice at a high temperature, thus avoiding fermentation; vacuum pans for boiling, evaporating, and concentrating the saccharine matter of the cane juice (called tripple-effect apparatus) were also established; and to separate the molasses from the sugar, centrifugal filters were introduced. At the same time railways were constructed in the interior of mills and factories, easily accessible laboratories were established to assure the chemical proceedings in the process of sugar manufacturing, and electric light used instead of kerosene, gasoline, etc. Railroad branches connecting the sugar mills with depots and other shipping places have been constructed to facilitate the transportation of products, and also branches of private service extending to zones where no railroads of public service have as yet been built.

For the purpose of loading carts with cane in the fields and unloading the railroad cars or on the slate gutters (cane conductors) at the mills, several devices have been patented under the name of "loaders and unloaders of cane," which are very simple, inexpensive, and great labor savers.

Manufacturing of starch from yucca.—The farms on which this industry was carried on before the war were destroyed or burned down and have not been reconstructed up to the present date.

Coffee plantations (*cafétales*).—In the Province of Santiago de Cuba a move in the way of reconstruction of farms of this kind has begun, and it is hoped that this industry will soon be of great benefit to the island and a sufficiently large crop for home consumption be gathered.

Sugar-cane colonies.—Owing to the lack of pecuniary means among the owners of lands where these colonies were established, agricultural development is rather unimportant, as the proprietors of the centrales can not afford to advance money for the purpose of rebuilding the wrecked houses, purchase of oxen and agricultural implements, as well as for plowing and planting anew the fields; and as there are no agricultural banks in Cuba to furnish the necessary funds for this purpose, the planting of new cane lands since the end of the war has been limited.

Cattle farms (*portreros*).—Farms of this kind have been reconstructed, though only for fattening imported cattle.

Tobacco plantations (*vegas*).—Most of these farms in the Provinces of Pinar del Rio, Habana, and Santa Clara have been reconstructed, and in some places in Pinar del Rio and Habana, especially in the municipality of Guira de Melena, the sprinkling process, with the aid of iron pipes (Kennedy's process), has been established for the purpose of securing the crops.

Minor estancias.—Great activity is noticed in the reconstruction and improvements of these farms, owing to the fact that only a small amount of money is needed.

In the municipality of Guines and on the farms near the banks of the Almendares River in Habana and in the municipality of Marianao this kind of culture is mostly carried on. In normal times these municipalities almost exclusively furnish the markets of Habana with fresh vegetables.

MARKET FACILITIES.

The principal sugar plantations in the Province of Santiago de Cuba are located near the seashore in the municipalities of Manzanillo, Guantanamo, and Puerto Padre; in the Province of Puerto Principe they are situated near Nuevitas. They use the maritime way for transportation of products.

In the western Provinces those located near the seashore utilize the maritime way, but the greater number of them use the several railroad systems of Santa Clara, Matanzas, and Habana for transporting their products. Farmers raising tobacco in the Province of Pinar del Rio use the Western Railway and some seaports for exporting their leaves.

VALUE OF CROPS.

In 1894, one year before the outbreak of the revolution, the value of the principal products exported was as follows:

Sugar	$65,000,000
Tobacco	25,000,000
Molasses and rum	12,000,000
Coffee	1,510,000
Fruits and vegetables	1,150,000

SUGAR PRODUCTION AND EXPORT.

As to the crops in the present year, it may be said that the sugar crop amounted to 940,000 tons, although up to May 31 only 839,294 tons (of 2,240 pounds each) were delivered at the various ports in the island. Of this, 492,653 tons have been exported and 371,941 tons are held in storage. To these figures must be added 17,230 tons consumed in the island, and the 42,530 tons of sugar which were on hand January 1, 1903, from previous crop should be deducted therefrom. The difference between the figures thus realized and the 940,000 tons referred to is represented by sugar still at plantations and remaining to be delivered at some future date.

The prices obtained from the sale of sugar in January, February, March, April, and May, 1903, were 1.965, 1.824, 1.774, 1.651, and 1.667 cents per pound, or an average for the five months of 1.776 cents per pound, which gives a total value of $37,395,456 to the present crop. These prices are in Spanish gold.

The following table shows sugar exported, on hand, consumed, etc., for the years 1902 and 1903:

Port of shipment.	Exported.		On hand.	
	1902.	1903.	1902.	1903.
Habana ....sacks...	102,396	233,745	740,133	600,620
Matanzas....................do......	100,041	563,123	812,711	606,039
Cardenas....................do......	160,312	470,246	883,042	724,496
Cienfuegos....................do......	568,088	795,314	211,044	204,982
Sagua la Grande....................do......	57,732	280,038	220,809	102,423
Caibarien....................do......	50,189	154,966	251,460	213,103
Guantanamo....................do......	160,793	230,417	125,441	61,925
Cuba....................do......	41,643	86,546	17,348	16,623
Manzanillo....................do......	127,443	251,445	12,950	11,100
Nuevitas....................do......	76,500	95,895	58,694	14,374
Gibara y Puerto Padre....................do......	205,332	222,701	21,354	16,281
Zaza....................do......	13,452	7,730	8,935	10,721
Trinidad....................do......	7,000	56,407	60,000	20,900
Total sacks....................	1,670,921	3,448,573	3,423,921	2,603,587
Total tons....................	238,703	492,653	489,132	371,941
Local consumption for five months....................tons...	....	....	16,840	17,230
On hand January 1....................do......	....	....	19,873	42,530
Received up to May 31....................do......	....	....	724,802	839,294

TOBACCO CROP.

Crop of 1902.—The tobacco crop of 1902 was only medium, being 77,836 bales less than the crop of 1901. This deficit may be divided as follows: Vuelta-Abajo district, 12,425 bales; Partidos district, 5,354 bales; and Remedios district, 60,057 bales.

The statistics of the 1902 tobacco crop show the following figures: Vuelta-Abajo, 172,870 bales; Semi-Vuelta, 13,042 bales; Partidos, 54,486 bales; and Remedios, 111,796 bales.

According to weights, the returns are approximately as follows:

District.	Quantity.	
	Kilograms.	*Pounds.*
Vuelta-Abajo	7,952,020	17,531,023
Semi-Vuelta	559,925	1,234,411
Partidos....................	2,005,075	4,420,388
Remedios	6,171,139	13,604,893
Total....................	16,688,159	36,790,715

The deficit in the 1902 crop compared with that of 1901 was not only due to the shortage in the crop from the fields, but also to a decrease in the acreage under cultivation. This latter cause especially obtained in the Remedios section, in which a large stock of tobacco had to be taken over from 1901 to 1902, as consumption in the United States has fallen off considerably.

Owing to want of rain, the 1902 crop did not cure as satisfactorily as desired and remained in a raw condition. About 60 per cent of the crop was sent to the United States. The balance was divided among the different nations as follows, the values being approximate:

Country.	Quantity.	Value.
	Bales.	
Germany	12,000	$200,000
France	2,000	116,000
Spain	28,000	350,000

The total amount of 1902 tobacco exported was 243,958 bales, valued at $6,700,000.

Crop of 1903.—The 1903 crop will probably be in quantity as large as that of 1902, but in regard to quality a more satisfactory yield is generally expected. So far, only a small part has been placed on the market, as constant drought prevented the manipulation of the new leaf. Sales effected up to date do not seem to leave large margins to growers, as the planting of seedlings had to be effected in some districts three times, on account of excessive rains which washed out the young plants.

MOLASSES.

The molasses produced amounted to 40,000,000 gallons, of which 12,000,000 gallons of the first quality were exported from this city (Habana) to Philadelphia and 10,000,000 gallons of the second quality to other ports in the United States and to Europe. The remainder—18,000,000 gallons—was consumed on the island. Molasses of first quality sold at 8 cents and second quality at 3 cents. The total value of the production was $1,800,000.

PINEAPPLES.

The export of pineapples is greatly increasing, and it can be stated that fully 800,000 crates and barrels have been exported this year. The fruit is most delicious and finds ready sale in the United States. The value of the crop this year amounted to over $1,500,000.

VEGETABLES.

Exports to the United States of tomatoes, potatoes, onions, peppers, eggplant, okra, etc., show a notable increase. The onion crop of this year has been somewhat of a failure. The vegetables exported, however, found ready sale in the United States to the amount of $100,000.

PROPOSED CULTIVATION OF SEA ISLAND COTTON.

The cultivation of cotton is being seriously considered, and the following report, made by an American cotton expert, on the suitability of land in Cuba for the successful raising of cotton will perhaps more clearly explain the possibility of a great future here for this product:

DECEMBER, 1902.

After extensive examination of the farm lands in Pinar del Rio, which you commissioned me to inspect and report upon as to their adaptability and value for Sea Island cotton raising, I beg to say that I consider the soil extremely well suited to the purpose, being of a rich, sandy loam, well watered and lying nicely.

Part of the land is under cultivation with tobacco and part with sugar cane. Several hundred acres are woodlands, with abundant timber for building purposes and fuel, but the greater portion of the tract appears to be recently cleared virgin soil of great fertility.

I would estimate that there is timber and fuel in sight for many years' supply.

I found cotton growing wild in the woods, without any cultivation, rich in block and full of open cotton and grown bolls. These trees appear to range from 1 to 5 years in age. The fruit blooms and forms on the younger plants all seemed to be in perfect growing condition, which is remarkable at this season of the year and leads me to believe that they would thrive still better and bear still more abundantly in summer.

On my visits to cultivated farms in the island, I have seen tame Sea Island cotton planted from seed imported from Florida anywhere from 15 days to 4 months old, and in every case the plants appeared healthy. Plants 2 weeks old were from 6 to 7 inches high; those 4 months old were from 4 to 6 feet in height, the latter weighed down with all the fruit the stalks could hold, from grown bolls to small forms, averaging 80 bolls and forms to the stalk.

With such a yield from a plant only 4 months old, I hesitate to estimate what the crop would be from a 12-month-old tree, as the rapid increase in the size of the stalk would cause it to bear much more fruit toward the latter part of the year.

I should make a conservative estimate at 500 mature bolls per tree for the first year and should judge that every crop will be better until after the third or fourth year.

This would give a result of 4 pounds of seed cotton to the stalk in a year's growth, or about 3,000 pounds of seed cotton to the acre, which would net at least two 500-pound bales of lint cotton per acre.

The plants all appear to bear full and do not shed the young bolls as they do in Georgia and Florida.

The staple is fine and silky and longer than the average Sea Island cotton in the United States. The staple furthermore appears to me as strong as any of our finer class of cottons, and I believe would gain additionally in strength with the employment of a high-grade fertilizer, as has been the experience in the South.

I consider this variety superior to our East Florida cotton, and would sell cheap at from 18 to 21 cents per pound. I believe that after the third year the plant would grow so that the cotton would get out of reach, but this might be remedied by tapping.

I would recommend breaking ground as early as December, and planting in March, April, and May, bedding up the land, planting the seed on the crown of the beds, and allowing furrows between beds to drain off excess moisture during the heavy rains.

I also believe it will be necessary to cultivate and weed the ground frequently, as weeds appear to grow with great rapidity and thickness.

The insects I have noticed in the cotton fields are nothing as compared to what I have seen in Florida. I found our fireworm and caterpillar in the trees, but in numbers they are not worth mentioning. In Florida we kill these insects by sprinkling the bushes with a mixture of 1 tablespoonful of paris green to 1 gallon of corn meal, and I should think the same treatment, or perhaps a liquid solution of the same poison, would exterminate the insects equally well here.

I noticed that the tobacco plants on the island appeared to be attacked by the same insects as our tobacco in Florida, and I should judge the same conditions would apply to cotton.

In a word, I consider conditions in Cuba from every standpoint more favorable to the successful cultivation of cotton than conditions in the cotton belt of the United States, and that with proper preparation of the soil, careful selection of the seed, and frequent cultivation the Sea Island cotton grown in Cuba will be far superior to our best varieties.

The native wild cotton resembles the Egyptian variety in texture and has a clean, black seed, with a staple somewhat longer than our best uplands, but I would recommend the exclusive growing of Sea Island cotton on your plantations, as the conditions of the soil there appear to me favorable to the successful raising of the choicest variety of long-staple cotton.*

WATER POWER OF CUBA.

Water power has been very little employed in Cuba, although a great many rivers and creeks of considerable capacity exist to supply power.

The Almendares River, which passes through the outskirts of Habana on the west side, supplies the city and suburbs at present with 1,200 horsepower for a paper mill, brewery, and other turbines already established of 250 horsepower each. By going farther up more power may be obtained without causing great damage to the others below. Mayabeque River, in Guines, Province of Habana, was, until a few years ago, supplying power to run two sugar plantations. The water is now used in irrigation. In the San Juan River, Matanzas, there is a turbine established to run an ice factory.

Water power is not used anywhere else in the whole island to my knowledge.

With the exception of the four large cities—Habana, Matanzas, Cienfuegos, and Santiago de Cuba—which have aqueducts and obtain their water supply directly from the springs, water is generally obtained from wells, rain cisterns, and directly from the rivers and creeks near by. Wells and natural springs are mostly used.

REVENUES AND EXPENDITURES.

Revenue.—The revenues of the island are classified as receipts from customs, internal revenues, postal and telegraph, and miscellaneous sources. A recapitulation of the hereinafter-given tables shows them to have been as follows, from May 20, 1902 (the date when the Republic was established), to December 31, 1902:

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*For the above report, I am indebted to Mr. A. N. Livesy, general manager of the Western Railway of Cuba.

Custom-houses	$8,900,572.70
Internal revenues	500,570.94
Postal and telegraph	279,479.71
Miscellaneous	48,825.50
Total	9,729,448.85

Expenditures.—The expenditures for the same period as that for which the revenue is given, May 20 to December 31, 1902, were as follows:

Department.	Amount.	Department.	Amount.
State and government	$302,632.89	Miscellaneous	$61,986.37
Justice	134,704.84	Legislative	210,145.21
Public instruction	1,631,358.29	Executive	29,384.53
Finance	1,093,146.32	Government	1,621,687.87
Agriculture, industries, and commerce	124,382.23	State and justice	507,355.85
Public works	1,511,712.85	Total	8,102,587.30
Municipalities	827,080.72	Excess of revenue	1,626,861.55
Military department	47,009.33		

Showing a creditable saving during the first seven months of the life of the Republic.

For the figures quoted, I am indebted to the auditor-general of the Republic of Cuba. They are taken from the verified and audited accounts submitted to his office.

IMPORTS AND EXPORTS, INCLUDING GOLD AND SILVER.

Statistics covering the imports and exports are compiled only up to and including December 31, 1902, and were as follows:

Country.	Imports.		Exports.
	Value.	Duties.	
United States	$26,053,395	$5,006,148	$49,498,587
South American countries	8,208,937	1,384,678	1,306,342
Germany	3,612,038	861,110	3,967,789
Spain	10,105,816	2,977,089	1,681,294
France	3,222,087	879,724	1,298,094
England	9,098,890	2,304,272	5,807,247
Other countries of Europe	1,482,681	285,585	1,032,675
All other countries	351,620	155,538	356,776
Total	62,135,464	13,854,144	64,948,804

The following statements show the imports into and exports from Cuba from and to the several countries, values and trade percentages being given:

Imports.

Whence imported.	1899.		1900.	
	Value.	Percentage.	Value.	Percentage.
America.				
United States	$29,181,700	43.7	$29,176,000	43.8
South American countries	10,573,800	15.8	9,383,100	14.1
Europe.				
Germany	2,024,000	3	2,982,800	4.5
Spain	11,116,500	16.6	9,755,700	14.7
France	2,741,500	4.2	3,267,600	4.9
England	9,831,900	14.7	10,463,300	15.6
Other countries of Europe	1,124,700	1.7	1,399,200	2.1
All other countries	189,000	.3	230,900	.3
Total	66,783,100	100	66,658,600	100

Whence imported.	1901.		1902.	
	Value.	Percentage.	Value.	Percentage.
America.				
United States	$28,078,600	42.2	$26,053,395	42
South American countries	11,270,800	16.9	8,208,937	13.2
Europe.				
Germany	3,495,900	5.3	3,612,038	5.8
Spain	9,498,700	14.3	10,105,816	16.2
France	2,944,300	4.4	3,222,087	5.2
England	9,562,600	14.3	9,098,890	14.6
Other countries of Europe	1,404,600	2.1	1,482,681	2.4
All other countries	328,500	.5	351,620	.6
Total	66,584,000	100	62,135,464	100

The foregoing figures show that the imports of 1902 were $4,448,536 less than those of 1901, and that the exports of 1902 exceeded the imports by $2,813,340.

Exports.

Whither exported.	1899.		1900.	
	Value.	Percentage.	Value.	Percentage.
America.				
United States	$37,411,600	83	$33,246,600	68
South American countries	640,500	1.4	1,309,000	2.8
Europe.				
Germany	1,592,500	3.5	5,545,800	11.3
Spain	1,155,900	2.5	830,400	1.6
France	1,200,600	2.9	1,267,200	2.6
England	2,702,800	5.9	5,427,700	11.2
Other countries of Europe	252,900	.6	777,200	1.2
All other countries	110,500	.2	500,700	1
Total	45,067,300	100	48,904,600	100

Exports—Continued.

Whither exported.	1901.		1902.	
	Value.	Percentage.	Value.	Percentage.
America.				
United States	$48,066,600	76	$49,498,587	76.2
South American countries	1,420,300	2.2	1,306,342	2.1
Europe.				
Germany	4,240,200	6.7	3,967,789	6.1
Spain	711,400	1.1	1,681,294	2.6
France	1,348,600	2.1	1,298,094	1.9
England	5,941,300	9.4	5,807,247	9
Other countries of Europe	1,067,700	1.7	1,032,675	1.6
All other countries	482,300	.8	356,776	.5
Total	63,278,400	100	64,948,804	100

The exports of 1901 and 1902 show a large increase.

It must be noted also that the importations from the United States into Cuba since 1899 have fallen off considerably, whereas importations from Germany, especially, and other countries in Europe show a steady increase.

HOW TO INCREASE AMERICAN TRADE.

While the demands of the domestic trade in the United States during the present era of prosperity may be responsible for the fact that the manufacturers in the United States overlook the market which Cuba offers, yet this can not be considered as an adequate reason for the loss of trade to the United States.

Large shipments of hardware, both from England and Germany, are constantly being made to this Republic, and inquiry as to the cause for such shipments brings out the fact that many of our manufacturers refuse to devote a portion of their output for export, and Cuban buyers, finding that they are unable to get their orders filled in the United States, naturally turn to the European market.

If at some time in the near future our home market shall have been supplied and manufacturers are forced to turn to other countries to find an outlet for their productions, difficulty will be experienced in diverting the trade of Cuba from established channels, and the undertaking will be found both expensive and doubtful of success. It is to be hoped that the American manufacturer will anticipate this situation and take prompt steps to remedy the falling off in trade between the United States and Cuba.

The establishment of a United States merchants' exchange at Habana is earnestly advised. A suitable place devoted to the exhibition of goods manufactured in the United States would be an inexpensive and most efficient assistance to our manufacturers.

If pending treaties between the United States and the Republic of Cuba are ratified a large influx of capital may be expected. Improvements will continue to be made, which naturally carry with them employment for those now unemployed.

In this connection I desire to refer to the Cuban Railway. The construction of this railway, which was commenced in November, 1900, and finished November 11, 1902, has opened up a territory which includes 70 per cent of the area of the island. This territory, however, only contains at this time about 38 per cent of the total Cuban population. Between 6,000 and 7,000 workmen were employed by the railway company during the past two years, and the cost of construction up to date has been $10,500,000. Naturally, considerable additional improvements will have to be made on this railroad, necessitating the outlay of a further large amount of money. Villages and towns will spring up along the line. Virgin soil will be cultivated and a great market for goods manufactured in the United States can be secured if our manufacturers will become interested and take advantage of the opportunities afforded them.

CATTLE RAISING.

One of the principal industries in Cuba formerly was cattle raising, and while in 1899 but very few cattle were on the island, statistics show that 288,324 cattle were imported during 1900; in 1901, 368,793; and in 1902, 267,281. During the same period the following number were slaughtered: In 1900, 171,071; in 1901, 174,887; and in 1902, 176,962. From these figures it is very evident that the importations far exceed the needs of home consumption, and when the natural increase during the period stated is considered, it can be safely asserted that cattle raising will again become one of the most extensive industries of the island. There are numerous tracts of land well fitted for this purpose. The cattle fatten well and produce meat of good quality. The percentage of loss on account of sickness is very small. In 1901, 689,353 were registered, and at the end of the past year the registration shows 999,862 head of cattle. Competent authorities assure me that nearly 2,000,000 head of cattle were registered in Cuba prior to 1895.

IMMIGRATION.

During the year 1902, 11,986 immigrants came to Cuba. Of these, 9,496 were men and 2,490 women; 8,877 were Spaniards, 1,063 Americans, 389 English, 232 Syrians, 222 Italians, 171 French, 145 Chinese, 69 Germans, and 818 from all other countries. The immigrants under 14 years of age numbered 2,523; between the ages of 14 and 45, 8,809; 45 years or over, 654. Married immigrants numbered 3,377, and 8,609 were single.

From January 1, 1903, to June 1, 1903, 3,766 immigrants arrived at Habana, Cuba, of which 3,009 were men and 757 women; 144 were Americans, 3,290 Spaniards, and 332 were from all other countries.

PASSENGERS.

A statement of passengers who arrived in and sailed from the different ports of Cuba during the period from May 20 to December 31, 1902, is as follows:

Arrivals and departures by ports.

Port.	Arrivals.				Departures.			
	Males.	Females.	Children.	Total.	Males.	Females.	Children.	Total.
Baracoa	29	14	16	59	14	3	4	21
Batabano	1	1	5	7	....	....	....	....
Caibarien	15	4	7	26	....	....	....	....
Cardenas	14	7	1	22	....	....	....	....
Cienfuegos	230	35	7	272	94	14	2	110
Guantanamo	15	3	7	25	....	....	....	....
Gibara	80	30	31	141	17	8	18	43
Habana	11,303	3,097	2,564	16,964	13,890	2,980	1,708	18,578
Manzanillo	26	23	16	65	8	1	2	11
Matanzas	99	44	36	179	164	68	13	245
Nuevitas	178	85	32	295	96	24	13	133
Santiago	1,141	367	264	1,772	1,307	264	139	1,710
Tunas	3	1	....	4	....	....	....	....
Total	13,134	3,711	2,986	19,831	15,590	3,362	1,899	20,851

Arrivals and departures by countries.

Country.	Arrivals.				Departures.			
	Males.	Females.	Children.	Total.	Males.	Females.	Children.	Total.
United States	5,948	1,920	947	8,815	6,388	1,794	948	9,130
South America	90	22	19	131	88	18	17	123
Danish West Indies	5	....	....	5	....	....	....	....
British West Indies	8	7	7	22	3	....	5	8
Canada	12	9	....	21	9	2	....	11
Costa Rica	13	6	5	24	36	17	16	69
Haiti	51	21	9	81	38	7	2	47
Honduras	12	5	3	20	8	3	9	20
Jamaica	187	105	62	354	281	78	20	379
Mexico	707	197	92	996	3,203	646	336	4,185
Porto Rico	186	69	49	304	239	54	43	336
Santo Domingo	246	93	92	431	142	32	20	194
Germany	32	9	4	45	13	1	....	14
Austria	....	....	....	....	1	....	....	1
Denmark	....	....	....	....	1	1	....	2
Spain and Canary Islands	5,459	1,207	1,668	8,334	5,022	665	465	6,152
France	77	28	18	123	29	23	12	64
Greece	....	....	....	....	1	....	....	1
England	38	9	7	54	56	14	3	73
Italy	60	4	4	68	27	7	3	37
British India	2	....	....	2	1	....	....	1
Sweden and Norway	....	....	....	....	1	....	....	1
Switzerland	1	....	....	1	....	....	....	....
China	....	....	....	....	3	....	....	3
Total	13,134	3,711	2,986	19,831	15,590	3,362	1,899	20,851

NAVIGATION.

The movement of steamers and sailing vessels which entered the different ports of the island of Cuba during the year 1902 is as follows:

Coastwise trade.

ARRIVALS.

Port.	Steamers.		Sailing vessels.		Total.	
	Number.	Gross tonnage.	Number.	Gross tonnage.	Number.	Gross tonnage.
Baracoa	122	157,255	71	2,644	193	159,899
Batabano	205	175,680	1,165	28,940	1,370	204,620
Caibarien	159	125,911	285	8,919	444	134,830
Cardenas	136	40,366	1,109	54,884	1,245	95,250
Cienfuegos	525	469,331	309	17,240	834	486,571
Gibara	137	159,501	723	17,451	860	176,952
Guantanamo	141	78,521	9	1,508	150	80,029
Habana	366	272,930	1,912	139,181	2,278	412,111
Manzanillo	122	138,771	142	7,983	264	146,754
Matanzas	13	966	461	18,061	474	19,027
Nuevitas	207	225,199	1,001	18,825	1,208	244,024
Sagua	313	236,706	846	31,874	1,159	268,580
Santa Cruz	109	130,315	147	3,140	256	133,455
Santiago	223	191,234	63	2,133	286	193,367
Trinidad	382	258,457	148	5,779	530	264,236
Tunas	333	259,699	105	3,891	438	263,590
Total	3,493	2,920,842	8,496	362,453	11,989	3,283,295

DEPARTURES.

Baracoa	123	157,261	68	2,524	191	159,785
Batabano	206	180,246	1,158	28,466	1,364	208,712
Caibarien	159	125,911	314	9,574	473	135,485
Cardenas	136	40,367	1,130	55,784	1,266	96,151
Cienfuegos	535	469,930	299	16,632	834	486,562
Gibara	138	160,068	727	17,397	865	177,465
Guanabacoa	138	74,551	6	238	144	74,789
Habana	366	274,783	1,919	138,417	2,285	413,200
Manzanillo	121	138,760	142	7,984	263	146,744
Matanzas	17	6,763	463	18,130	480	24,893
Nuevitas	213	228,065	1,079	20,467	1,292	248,532
Sagua	312	236,591	815	30,788	1,127	267,379
Santa Cruz	109	130,517	148	3,152	257	133,669
Santiago	222	192,805	63	2,330	285	195,135
Trinidad	383	258,674	148	5,789	531	264,463
Tunas	334	260,991	111	3,912	445	264,903
Total	3,512	2,936,283	8,590	361,584	12,102	3,297,867

Seagoing trade.

ARRIVALS.

Port.	Steamers.		Sailing vessels.		Total.	
	Number.	Gross tonnage.	Number.	Gross tonnage.	Number.	Gross tonnage.
Baracoa	56	75,885	40	6,502	96	82,387
Batabano	....	....	12	321	12	321
Caibarien	102	251,071	25	4,755	127	255,826
Cardenas	190	458,451	71	19,542	261	477,993
Cienfuegos	284	677,387	88	45,379	372	722,766
Gibara	207	298,321	19	2,447	226	300,768
Guantanamo	69	164,109	4	2,127	73	166,236
Habana	1,129	3,008,102	232	93,013	1,361	3,101,115
Manzanillo	101	229,113	37	15,699	138	244,812
Matanzas	259	663,704	32	15,263	291	678,967
Nuevitas	120	237,385	31	8,522	151	245,907
Sagua	86	208,446	21	8,575	107	217,021
Santa Cruz	20	41,691	23	13,347	43	55,038
Santiago	460	1,213,698	64	29,252	544	1,242,950
Trinidad	12	20,832	6	1,700	18	22,532
Tunas	9	24,356	19	7,676	28	32,032
Total	3,124	7,572,551	724	274,120	3,848	7,846,671

DEPARTURES.

Baracoa	55	74,074	40	6,535	95	80,609
Batabano	....	....	9	256	9	256
Caibarien	102	251,071	23	3,562	125	254,633
Cardenas	191	460,158	66	18,205	257	478,363
Cienfuegos	284	681,540	88	44,991	372	726,531
Gibara	208	299,389	19	2,447	227	301,836
Guantanamo	72	168,080	4	2,077	76	170,157
Habana	1,115	2,955,909	234	103,441	1,349	3,059,350
Manzanillo	100	225,741	36	16,155	136	241,896
Matanzas	259	661,579	33	16,117	292	677,696
Nuevitas	116	234,429	31	8,136	147	242,565
Sagua	84	206,334	20	8,317	104	214,651
Santa Cruz	20	41,691	22	12,382	42	54,073
Santiago	484	1,219,629	62	29,738	546	1,249,367
Trinidad	12	20,832	5	830	17	21,662
Tunas	9	24,356	20	8,070	29	32,426
Total	3,111	7,524,812	712	281,259	3,823	7,806,071

F. STEINHART, *Consul-General.*

HABANA, CUBA, *June 30, 1903.*

SUPPLEMENTARY REPORT.

In connection with and in continuation of my report rendered under date of June 30, 1903, I now submit further statistics regarding commercial matters of the Republic of Cuba.

REVENUES.

The customs revenues of the Republic for the six months ended June 30, 1903, were as follows:

Customs duties	$7, 393, 510. 65
Internal revenues	456, 215. 68
Postal department	266, 466. 20
Other sources	81, 747. 56
Total revenues	8, 197, 940. 09

The expenditures of the Republic during the same period (January to June, 1903) have as yet not been completely audited, but will amount to $5,229,250.72, leaving an available cash balance on June 30, 1903, of $2,968,689.37.

SUGAR AND TOBACCO.

As stated in my previous report, the 1903 crop of sugar reached the large amount of 940,000 tons (of 2,240 pounds each), and a conservative estimate of the crop of 1903-4 places the amount at 1,250,000 tons.

The exports of sugar and tobacco during the four years I have been on duty in Cuba—1899 to 1902—amounted to nearly 90 per cent of the total exports of the island. The value of the sugar exported from 1899 to 1902, inclusive, amounted to $99,932,600; of tobacco, to $97,904,200, of which $47,890,700 was for leaf tobacco and $50,013,500 for cigars, cigarettes, and cut tobacco—thus making a total for sugar and tobacco for the four years of $197,836,800. During the same period other exports amounted to $23,743,300, divided as follows:

Agricultural products and rural industries	$14, 075, 100
Mineral products (iron, manganese, and asphalt)	3, 909, 300
Fisheries (sponges, tortoiseshell, etc.)	1, 929, 300
Other articles, reexported articles, and gold and silver	3, 829, 600

While sugar and tobacco to-day represent the wealth of the island, prior to 1830 coffee was its principal source of wealth, yielding as much as 100,000,000 pounds annually, worth $18,000,000.

MINOR PRODUCTS.

An analysis of the minor products of Cuba exported during the period referred to (four years) is of interest.

Under the heading "fruits" the sum of $801,200 is stated as exported in 1899, while in 1902 the figures under the same heading are stated as $1,906,600, divided as follows:

Bananas	$621,000
Pineapples	451,300
Cocoanuts	189,500
Oranges and lemons	3,500
Aguacates and mangoes	9,300
Cacao	552,400
Coffee	1,300
Onions, tomatoes, beans, etc	78,300

The pineapple crop of 1903 is valued at $1,500,000, and the orange and lemon crops will also show a great increase this year and from now on, as large numbers of trees planted during the past three years are now bearing fruit.

Forest products exported in 1899 were valued at $1,059,900, and in 1902 at $1,874,800, viz:

Woods (mahogany and cedar, principally)	$1,428,600
Textile fibers	380,900
Dyes	65,300

Skins, horns, and hoofs of animals show a total of $463,800 exported in 1902, as compared with $310,200 in 1901.

Honey was exported to the amount of $308,100 in 1902, against $189,200 in 1901.

Wax was exported to the amount of $373,300 in 1902, compared with $270,500 in the previous year.

In 1899 the total value of the products exported, other than sugar and tobacco, was $2,413,600, or 5.4 per cent of the whole; in 1902 the total was $4,926,600, or 7.6 per cent of the whole.

While the foregoing figures clearly establish what I desire to bring to the attention of the Department—namely, that agriculture and rural industries are steadily and successfully prosecuted in this island—I must nevertheless call special attention to the smallness of the fruit trade between Cuba and the United States compared to that of Jamaica, the prosperity of which island is due largely to this trade. Almost the only market for the perishable products of the West Indies is the United States, and steps should be taken to locate and, when found, remedy the cause of the smallness of the Cuban fruit trade with the United States.

The exports from the Republic of Cuba during the first three months of 1903 were $18,322,630, compared to $13,461,034 in 1902.

F. STEINHART, *Consul-General.*

HABANA, CUBA, *August 18, 1903.*

AMERICAN HOSIERY FOR THE ORIENT.

(*From United States Consul Monaghan, Chemnitz, Germany.*)

There was recently organized in the city of Chemnitz an exporting house having for its object the importation of cheap American hosiery into Germany and the exportation of the same to the Orient. The modus operandi of this new organization seems to be to bring the cheap American hose upon the Chemnitz market, where every year the great eastern buyers of hosiery congregate in large numbers, and thus introduce them more effectively into the East by putting them in direct competition with the German hose manufactured in this vicinity. It is a well-known fact that the cheaper grades of American hosiery have already demonstrated their competitive ability upon the South American as well as upon the eastern markets, but it would seem that with the aid of the new local American exporting house entering right into the heart of one of its most formidable competitors these distant markets ought to prove far more remunerative than they have in the past.

There can be no question that the German hosiery industry can hold its own against that of any other country as far as the higher grades of hose are concerned, for Germany enjoys the numerous advantages accruing from cheapness of labor, thorough technical education, centuries of successful experience, and highly developed textile machinery. But in case of the cheaper grades of hosiery, where the determining elements of competitive ability are largely those of gigantic enterprise, thorough organization, extensive production by machine instead of by hand, and the general economy effected through operations conducted upon a colossal scale, the United States has proven itself a powerful competitor.

Because of the numerous uncertainties as to the responsibility and credit of eastern firms, one of the first requisites of the exporter in dealing with this region is thorough familiarity with his prospective customers, for there are houses with unshaken credit and others which must forever be closely watched in their operations. Oriental buyers are hard business men to deal with. They possess a wide and minute knowledge of the goods they handle and are well posted as to current values.

The leading eastern houses with established reputations generally pay by check upon delivery, or by means of an "accept" payable through the German Imperial Bank at Berlin. Smaller houses often run beyond their capital and prove very slow payers. Original cash stipulations are frequently changed to a three or four months' "accept" after several months of deliberation. While oriental buyers sometimes buy f. o. b. at the place of manufacture, they are reported to prefer, and frequently insist upon, payment upon delivery at destination. This is included in the term "cash." It is also well to remember that in Turkey and the East in general many houses include a three or two months' acceptance in the stipulation "cash." Great precaution is necessary, as experience is said to have shown the eastern buyer to be very unreliable when it comes to good faith that the European manufacturer or exporter has lived up to his order and his sample. He is likely to weigh the goods upon arrival and compare them with the sample submitted when the order was placed, and if he can find the slightest divergence in weight or quality, even in case of isolated dozens, he not infrequently demands reclamations out of all proportion to the discrepancy from the contract.

In the matter of the quality of the hosiery exported from Germany to the Orient, there must be emphasized the necessity of thick, heavy goods, closely knit, so as to leave little space between the threads. The reason for this is that the eastern people, using as they do sandals more generally than tight foot gear, require some covering that excludes insects from their feet. It will appear from this circumstance that much of the hosiery for certain oriental countries can not be used for other markets. In colors, black is probably most popular, according to reports here. Then, also, bright colors, such as green, light blue, pink, orange, lilac, and gay combinations, are easily disposed of in the East. The quantity bought depends largely upon the price of the goods. Hosiery ranging between 1.50 and 2 marks (35.7 and 47.6 cents) are reported to be purchased, in general, from 3,000 to 5,000 dozen pairs at a time by large houses. Those ranging in price from 2.50 to 3.20 marks (59.5 to 76.2 cents) sell in quantities from 500 to 1,000 dozen pairs; articles above 5 marks ($1.19) are at times disposed of in quantities of less than 100 dozen pairs.

In the line of underwear, medium maco shirts and drawers—sizes 34, 36, and 38 inches for shirts and 32, 34, and 36 inches for drawers—are most easily disposed of. The heavy quality of underwear, as manufactured in southern Germany, also finds a good market. In ribbed vests the cheaper grades sell best, with some demand for the fine wool grades.

The matter of packing is a very important consideration in exporting to the Orient. Generally, goods costing more than 2.50 marks (59.5 cents) must be put up in boxes of half a dozen, and those costing less than this amount in boxes of 1 dozen. Every pair of hose must be sewed together at three places by means of a woolen thread. Why preference is given to woolen thread is not quite plain, .but from information at hand I find that such is the fact. In many cases eastern houses have their own peculiar methods of packing and require the hosiery to be done up in accordance with their instructions. Great emphasis is always placed upon the stamping of the goods in general, as many as three stamps being demanded. Another common requirement is that the boxes used for different dozens and varying qualities must be made of paper of easily distinguishable colors.

Under present freight rates the transportation of goods is not as considerable an item as might be expected at first thought. A competent local shipper gave me the following estimates on freightage from Philadelphia to Constantinople: For every 40 cubic feet of space, a charge of 16.25 marks ($3.87). This, he estimates, puts the transportation charges at about 10 pfennigs (2½ cents) per dozen hose.

There is every reason to believe that the new venture of the exportation of cheap American hosiery to the Orient by way of Germany will be successful, as a roundabout way of exportation has been used heretofore. Good authority has it that during the last year at least $75,000 worth of American hosiery found its way into the East, especially the English colonies, by way of London. It would seem that these efforts will be even more successful when the American product is brought into immediate competition with the German make by being brought directly to the notice of the eastern buyer as he makes his annual visit to the Empire.

Most of the foregoing facts were obtained in conversation with commission men of this city who are desirous of adding to their German trade that of America as well. Almost in the same manner the German exporter was driven from the South American market. If our manufacturers and exporters give proper attention to all the details, such as packing, quality, stipulations of contract, adherence to sample, promptness of delivery, etc., there can hardly be a question of doubt but what we will be able to get a big share of the eastern trade. Especially necessary is it to emphasize promptness in delivery and the most scrupulous care as to the external appearance of the goods.

The men who are interested in this new undertaking are well posted in the eastern trade and represent a number of Chemnitz houses. For this reason they do not wish to have their names made public until the undertaking is ripe. Any correspondence on this subject addressed to this consulate will gladly be handed over to the men who are back of this new enterprise.

J. F. MONAGHAN, *Consul.*

CHEMNITZ, GERMANY, *August 18, 1903.*

ROOM FOR AMERICAN MANUFACTURES IN GERMANY.

(*From United States Consul-General Hughes, Coburg, Germany.*)

Autos.—Small automobiles or runabouts of American make, of from 6 to 10 horsepower, would, I think, have a good sale in this district. So far, only one American company has even asked for information as to the real class of goods wanted—though some fifty have sent English catalogues, which are worse than useless, as the people will not even look at them. What is wanted is a light machine, easily worked—not a complicated piece of machinery—with good brake power, as it is very hilly here, and above all a machine that is not too expensive. I should advise the opening of a small depot either here or in some neighboring city, where the goods can be shown and explained and where duplicate parts can be quickly and easily had. This latter is a very important matter, as German makers do not care to repair foreign (especially American) machines if they can possibly help it.

Rubber boots and shoes.—For rubber boots and shoes I know no better market than this, yet it seems to be totally neglected by our manufacturers. We now have to send to Berlin for everything of that kind, which causes extra expense and no chance to pick out the kind of rubber wanted.

Gas cooking stoves.—I think there is no place in the world where so primitive a gas stove sells for so much money as in Coburg. It would pay any of our well-known makers to send a few samples to the Coburg City Gas Works on commission and thus introduce something to the local market worth having.

Fruits.—While some kinds of California and other American dried and evaporated fruits are for sale here, the real good article is not to be had, and consequently we are often told that our fruits are not as high class as the Metz and other German brands. Our large exporting houses can rest assured that much better markets are to be had in the middle and southern parts of the Empire than in Hamburg and Berlin, especially for this class of goods, as the people are great preserved-fruit eaters and the local fruits are neither extra good nor cheap. The best way to send them is in half-pound glasses or tins, with labels in German explaining just how the fruits are to be treated or served.

Hardware and agricultural implements.—This is a branch that has been somewhat pushed in a business-like manner, with the result that it has paid well. While on every hand one can see evidences of the work accomplished, I think that very much more could be done if proper catalogues, diagrams, and explanations in the German language were sent around into the towns and villages.

Coal.—Since my last year's report (1902) nothing seems to have been done to promote the sale of this article. The samples that have been tried here have given most satisfactory results, but the business has been allowed to drop without a single effort to keep even the ground won by the favorable trials at different porcelain factories. The British seem to see the business that is to be done in coal in Germany, as the following statement shows: Imports into Germany of British coal during the first six months of 1901, 1902, and 1903 were 2,356,980, 2,289,259, and 2,444,688 tons, respectively.

Horses.—There has been quite a good demand for useful carriage, heavy draft, and a few selected saddle horses in this market, but only a few American horses have been for sale. Owing to the stony and hilly nature of the country, eastern horses do very well here, but western animals' hoofs go to pieces too quickly. There is quite an opening for very small ponies to take the place of dogs as used at present in pulling butcher, milk, and other carts.

Small chemical fire engines.—A good agent for an inexpensive but reliable class of these goods, if sent through the smaller towns, etc., giving practical exhibitions of his apparatus, would, I am sure, do a good business.

OLIVER J. D. HUGHES,
COBURG, GERMANY, *August 13, 1903.* *Consul-General.*

AMERICAN AND OTHER INTERESTS IN MEXICO.

In its issue of August 8, 1903, the South American Journal, a British publication, has an editorial on "British trade in Mexico." After a word commendatory of a report by British Consul Leay, it goes on to say:

> The report is well worth the attention of our manufacturers and merchants, since it emphasizes the fact which has been generally known for many years that British trade with Mexico has seriously declined and will probably continue to diminish. So much is this the case that there is not a single British firm or merchant in the city of Veracruz nor, we believe, in any of the other ports or cities of Mexico. On the other hand, trade between the Republic and the United States continues to flourish and increase and, besides, the Americans are actively engaged in investing large sums in mining and other enterprises in the country. These investments, according to a recent report, now exceed $500,000,000, whereas the British investments in railways, etc., have not recently made any advance, but were mostly made many years ago. The causes of our retrogression are well worth being made the subject of careful inquiry. It can not be alleged that it is on account of stagnation in the country, since no other Latin American Republic can show such a record of progress and progression in recent years as Mexicc,

although it is true that business is now disarranged, but only temporarily we believe, through the fall in the value of the silver standard.

Mr. Leay has evidently taken great pains to make his report of service to exporters, since he has gone into numerous details in describing the classes of goods which are in demand and has specified the manner in which they should be packed and invoiced for the customs authorities. This makes his report one of the most valuable which we have received through the foreign office for a long time and, in fact, ought to be a model for other consuls. There is also a series of tables of statistics relating to the imports and exports and to the shipping entering Mexican ports during the last five years. The decline of British trade is clear from the figures we quote from the report. In the years 1893–1895 imports from the United Kingdom formed 17 per cent of the total; in the period 1898–1900, 18 per cent; and last year it was only 13 per cent. In 1901–2 the imports from the United Kingdom and its colonies were valued at $8,142,038, against $9,659,515 in 1900–1901, a loss of $1,517,477. It is fair, however, to mention that the import trade between Mexico and other European countries has also declined in that period, Germany showing a decrease from $6,890,964 to $6,277,785, a difference of $613,179; France comes next with a decrease of $272,524—that is, from $6,389,715 to $6,117,190. On the other hand, the imports from the United States increased from $34,260,160 to $36,401,420, a gain of $2,141,260, almost exactly the value of the trade lost by Europe. It should be borne in mind that these figures represent, as nearly as possible, actual values, since in Mexico the excellent system has been adopted of valuing exports and imports at the actual rates of exchange of the day, another instance of the careful and practical methods of Señor Limantour.

The high rate of exchange has tended to stimulate domestic manufactures in many important lines, while the Government has made some efforts to encourage exports with a view to reducing the unfavorable balance payable in gold. This has been especially the case with cotton manufactures, and the steps recently taken are likely to result in diverting to Mexican mills a considerable portion of the trade in several Latin American countries at present principally in British hands. Great progress has been made in the last few years in diversifying the industries of Mexico, and the decline in silver has not, therefore, found the country entirely dependent upon its mineral exports. Railway building in various parts of the Republic has continued vigorously, and the investment of capital, particularly American, in mines, plantations, and industrial enterprises has been as great as ever, till at present the American capital alone is estimated to amount to over £100,000,000 ($486,600,000).

The consul makes the following important suggestions for improving trade:

"We can not afford to ignore the Mexican market, nor a country whose revenues have increased in twenty years from £2,000,000 to £6,000,000; imports from £3,000,000 to £13,000,000; and exports from £3,000,000 to £13,000,000. I would advise those who really wish to do business in Mexico to guarantee fixed salaries to agents for a year or two with the promise of a certain commission in addition when the sales exceed a certain amount. The Americans have succeeded throughout the country by paying large salaries and being well represented.

"We must make what the foreigner wants, and it would be well if on receipt of an order from this country the directions as to the goods required and the mode of shipment were followed absolutely.

"We could do with more commercial travelers. The few we have are now almost all British, apparently excellent business men. They have a knowledge of the language and tact, which is perhaps even more necessary. Those with choice samples will always do well.

"Price lists should be in Spanish, and firms should quote, as our travelers now do, f. o. b., c. i. f., inclusive. All prices should be quoted in sterling, or gold dollars perhaps better, reckoning $5 to the pound sterling. The Mexican seldom understands our pounds, shillings, and pence. To many old firms credit may safely be given, but the rule in other cases should be cash with order or against bill of lading.

"Our merchants should do their best in filling orders for Mexico to dispatch the goods at once on receipt of order if in stock, or to put the order in hand immediately if the goods are to be manufactured. It is, as I have already pointed out, the proximity that gives the United States the advantage, and while that must always remain so we should do our best to reduce that advantage to a minimum. Merchandise can be ordered from the United States and delivered in Mexico in from three weeks to a month; from England, in from eleven weeks to three months, and there is no reason, unless in exceptional cases, why there should be further delay. Besides, we have the other European countries to compete with and must show at least that we can do as well as they."

MEXICAN RAILWAYS.

The following is a résumé and condensation of articles in the Mexican Journal of Commerce of August 1, 1903:

Mexico has 11,185 miles of railroads, valued at more than $1,000,000,000 Mexican. So recent a thing is railroad building in the Republic to the south that one sees engines in operation that hauled the first trains that Mexico ever ran. The earning capacity of capital in Mexico is considered safe. Fully $500,000,000 have gone in from the United States, and of this 70 per cent has gone into railroads. More is entering every day. Pullman cars, huge Mogul engines, and gigantic freight cars are the rule now, where hitherto they had been the exception. Most of the rolling stock was made in the United States. If Mexico is making her mark in industrial prosperity it is because the Government was wise enough to get the railroads to give them a chance to grow; these brought investors, then manufacturers, then captains of industry, then prosperity. To-day trains run to all parts of the Republic, or will very shortly. Remote regions, held hitherto to be almost inaccessible, are being bound to the central city—the capital—by bands of steel. Ports like Veracruz are put into communication with transoceanic places. The rich mining and agricultural lands of the south are tapped till they pour their treasures into the world's markets. A mighty line is to connect Salina Cruz, on the Pacific, with Coatzacoalcos on the Gulf. According to careful estimates this road is to put New York and New Orleans 1,500 miles nearer to San Francisco than they would be by a passage through the canal at Panama. There are some who say it is to have a good deal of the trade that is to go over the Pacific. While the Panama Canal is to cost at least $180,000,000 gold, the Tehuantepec Railroad has cost about $45,000,000 silver, and will cost only a little more. The Mexican Government is quietly giving it financial aid and encouragement. The revenue required to make the two enterprises—the canal and the railroad—pay is $10,800,000 gold, against $2,700,000 silver. The saving of time is estimated at a high figure—not only the 1,500 miles difference in distance, but the slowness with which ships will have to pass through the canal are considered. [This item is hardly as important as the writers would have their readers regard it, the distance is so small.] An interesting feature is presented by the pan-American road which is rapidly reaching out toward Guatemala and is expected to form an important link in that chain of roads that is to connect Alaska and Canada with Patagonia, Brazil, and Chile. An independent line—that of Yucatan—capitalized at $30,000,000, every cent of which was raised in Yucatan, is to stretch its arms out toward central Mexico. Besides these, there are numerous roads that touch the great lines feeding them freight from remote and once almost inaccessible regions. These are mainly mining, logging, and plantation lines; but even these pick up quite a lucrative line of extra freight and passengers. "It is a fact, as surprising as it is true," says one of the writers from whose article much of this résumé is taken, "that there is not a railway in Mexico, no matter how small and insignificent, but what enjoys a local passenger and freight traffic far in excess of the same pretensions in the United States." [In this connection it is perhaps worth while to be reminded that there are over 200,000 miles of railroads in the United States, many of which were built long before any great or paying amount of freight or passengers was expected. The Mexican roads were very probably not built till the builders were fairly sure of both passengers and freight enough to pay.]

Gigantic growth of Mexican railroads.—In 1873 Mexico had 335 miles of railway. Over these went 723,834 passengers and 150,473 tons of freight, and the receipts were $1,848,375. In 1900 there were 8,460 miles in operation; 10,709,462 passengers and 7,522,923 tons of freight were carried and the receipts were $49,425,478. Since 1900 the mileage, freight, number of passengers, etc., have gone on increasing. Better ballast, steel rails for iron, steel bridges for wooden, first-class rolling stock, etc., all mark the methods of the Mexican railroad management. In the face of almost insurmountable natural obstacles—up hills, over mountains, and climbing precipices—the roads have gone till the tale, when told, sounds almost incredible.

BUSINESS OPPORTUNITIES IN PARAGUAY.

(*From United States Consul Ruffin, Asuncion, Paraguay.*)

I desire to call the attention of capitalists and those engaged in commercial enterprises in the United States to the new financial law recently passed by the Paraguayan Congress and promulgated yesterday by the President of the Republic. I inclose herewith the entire Spanish text, clipped from one of the daily papers; also a summary translation of the same. The authorities having charge of the expropriation of half the hides for exportation, which will amount to about 125,000, will entertain bids from various sources on these hides. I would suggest to the dealers and importers in hides that from what I can gather the most advantageous bids would embrace the price f. o. b. Asuncion. The number of hides may be larger than this calculation because in 1891 the total number exported amounted to 238,495, and they are increasing every year. People who are interested in waterworks should also send in their bids. The Government will negotiate a loan of $1,000,000 gold, and the number of hides expropriated by the Government under this law will be offered in arranging the guaranty. Parties interested in hides should be prompt in bidding, for the reason that the President of the Republic is authorized at the expiration of three months to arrange the disposal of them.

JOHN N. RUFFIN, *Consul.*

ASUNCION, PARAGUAY, *July 15, 1903.*

FINANCIAL LAW PROMULGATED JULY 14, 1903.

Those portions of the law which are considered of special interest to American capitalists and traders are herewith given. The whole law is on file in the Bureau of Statistics, where it may be seen by interested parties.

ARTICLE 1. The executive power is authorized to emit paper money in circulation to the amount of 35,000,000 pesos,* divided up in the following form:

	Pesos.
Actual emission	13, 569, 000
Nickel emission	500, 000
Increase of capital of Agricultural Bank	10, 931, 000
For construction of waterworks and closets	3, 000, 000
For other ends to be determined by special laws	3, 000, 000
For national college	500, 000
Penitentiary and jail	500, 000
Deficiencies of the treasury	3, 000, 000

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ART. 5. Immediately after the sanction of the present law the executive power will contract ad referendum for the construction of closets and the establishment of running water, within the limits which the voted sources will permit, proposing to Congress the basis of such a contract, the quotas that have to be paid by each individual for closets, and the amount that they will have to pay for running-water service.

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ART. 14. The exportation of hides is subject to duties as follows: Thirty-five cents on each hide. Half the hides which will be presented for exportation are to be delivered to the administration of the custom-houses of the Republic, which will pay for them a discount of 60 cents gold each, according to the following prices:

For each kilogram of dry hide, 26 cents gold; for each kilogram of salted hide, 16 cents gold; for each kilogram of fresh hide, 12 cents gold; for each kilogram of imperfect hides, one-third the preceding prices, according to the class.

The administrations of the custom-house will pay these prices in effective gold or its equivalent in paper money at the current rate of exchange of the day, not to exceed 900. If the prices of the hides suffer variations that exceed 10 per cent in the consuming market, the executive power will proceed to the revision of prices established in proportion to these variations.

From the 1st of January, 1904, at each time that the quotation of gold shall go above 900 the exportation of yerba mate will be subject to the following conditions.

Besides the taxes already in vogue and created by this law, half of the yerba mate that may be presented for exportation to the custom-houses of the Republic will be delivered to them, paying therefor the prices established in the tariff of values in gold or paper at the rate of 900, according as the Government wishes. The exporters of this article will be free from the preceding disposition if they should sell to the Government drafts in gold at the rate of 900 up to the value of the amount of that part of the yerba comprehended in this law.

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* In the absence of any recent information as to the value of the Paraguayan peso, American equivalents can not be given. In his report for September, 1902, Consul Ruffin gave the value of the paper peso at 8 cents—that is, it took 12 pesos to purchase a gold dollar.

AMERICAN CATTLE IN SOUTH AFRICA.

(*From United States Consul Hollis, Lourenço Marquez, Portuguese East Africa.*)

I forward herewith a very interesting newspaper clipping, for the use of the Department of Commerce and Labor, concerning the importation of cattle from Texas by the Anglo-American Live Stock and Trade Company, the pioneers in what is apparently destined to be one of the means by which South Africa is to make good the ravages of war and the vast waste and loss of live stock during the unhappy struggle which has only recently terminated.

One of the principals in this company filled an important office in the imperial service at Lourenço Marquez at one period of the war and was consequently able to judge the facilities which the port offers for the handling of cattle. The result is seen to-day in what is undoubtedly the most complete and practical arrangement for relieving cattle ships of their cargo which has ever been seen in South Africa.

W. STANLEY HOLLIS, *Consul.*

LOURENÇO MARQUEZ, *July 14, 1903.*

[From the Gold Fields News of June 30, 1903.]

THE DELAGOA CATTLE TRADE.

From the coast plains of Texas to Delagoa Bay is a far cry, but applied science has in these days obliterated distance and enables the astute man of commerce to draw his supplies from the ends of the earth, the mere question of mileage being one of the minor conditions in the problem of transport. Texas, as the State which ranks first in the Union in the breeding of cattle, naturally suggested itself as the source of supply, and the success of the first two shipments has been so conspicuously encouraging that the company are following up their recent arrivals, numbering 4,050 head of cattle, with seven more consignments, which will bring to these shores 8,300 more. With a view to indicating what is really the birth of a new branch of the trade, the writer paid a visit to the Port Matolla, where the steamship *Cranley*, a British vessel, is now discharging a cargo of 1,500 heifers and a few well-bred bulls. Owing to an accident to her machinery in the Gulf of Mexico, the ship was delayed at Barbados, but notwithstanding the somewhat long voyage of forty days she arrived at Lourenço Marquez with a record of only 13 deaths among the cattle. There were, however, 16 "new arrivals" to report en route, so that the result may be described as eminently satisfactory. The first shipment by the *Atlantian*, which brought the record cargo for South Africa, consisted of 2,550, with 22 casualties, so that it would seem that the company has in a measure solved the question of cattle transport and put to shame those who were responsible for the disgraceful results attending many of the attempts to bring live stock from Argentina and elsewhere during the war.

The *Cranley's* cargo consisted entirely of breeding stock, all from the hinterland of the port of Galveston, Texas, and made up of Shorthorns, Shorthorn-Herefords, Jerseys, Holsteins, and pure-bred Devons. As to conditions, it may be fairly said that the vast majority were in far better condition than most veld-fed Africander cattle after a moderate winter season. In the hundreds of animals seen in the Matolla yards, the writer did not see one showing signs of damage or hard treatment, and the manner in which the newly released heifers skipped about the kraals suggested anything but a seven weeks' confinement in a ship's hold, to say nothing of the long distances traveled ere they reached the port of embarkation. Most of the heifers are two-year olds, and many are in young. The bulk of the cargo is to order of the repatriation department. All the animals go first to Machadodorp, where they undergo the dipping process preparatory to being dispatched to other distributing centers. The importing company have depots at Pretoria, at Yokeskey River, and elsewhere, and it is to these places where other than Government stock goes before reaching the ultimate purchaser. It may safely be said that apart from the commercial aspect of the case the company is doing useful and beneficent work, and that the importations of such useful strains of breeding stock will eventually tend to an all-round improvement in South African herds. The promoters are to be congratulated on their prescience on selecting Delagoa as their port of discharge, and the cooperation of the Lingham Company is a valuable factor in the undertaking.

AMERICAN GRAIN SHIPPERS AT FAULT.

(From United States Deputy Consul-General Hanauer, Frankfort, Germany.)

German papers state that European purchasers of wheat and corn received from southern parts of the United States seriously complain about the bad condition of the grain when it reaches them. They claim that nearly half of all the maize coming to them from the United States is defective, and they have discussed among themselves the advisability of discarding the certificates issued by the United States inspectors. Heretofore it has been the custom of the trade to accept these certificates as proof of the sound condition of the grain, and in former years the consignments tallied with the inspectors' documentary evidence. Under the present usage the recipients of the grain, though the goods be found damaged on arrival, have no remedy at law or recovery for loss sustained, as the inspectors' certification protects the shipper.

SIMON W. HANAUER,
Deputy Consul-General.

FRANKFORT, GERMANY, *August 29, 1903.*

COMMERCE OF FINLAND WITH THE UNITED STATES.

(From United States Vice and Acting Consul Ek, Helsingfors, Finland.)

The natural products of the Grand Duchy of Finland for export are few, and its position on the Baltic, nowadays a remote inland sea, makes a lively transit trade impossible. The route for the world's traffic is drawn far from the coasts of Finland. The activity and comparative high culture of its inhabitants have nevertheless caused its foreign trade to develop so that it can not altogether be ignored nor overlooked on the world's market.

GENERAL TRADE OF FINLAND.

The total value of Finland's trade with foreign countries in 1902 amounted to 434,700,000 Finnish marks ($83,897,100), the imports amounting to 234,100,000 marks ($45,181,300) and the exports to 200,600,000 marks ($38,715,800). The receipts of customs were 31,400,000 marks ($6,060,200). In the foreign trade of Finland Russia takes a dominant part. This is owing not only to the intimate geographical position to the Empire, but also to its trade relations therewith. During the whole period in which Finland has been united with the Empire, trade legislation in her regard has been founded on more liberal principles than that with other countries. The high tariffs wherewith the industry of Russia has been protected have not been so severely enforced in the Grand Duchy. A full reciprocity has, however, never existed in the trade between the two countries, as Russian products and manufactures, with few exceptions, have been allowed free import into the Grand Duchy, while free imports from Finland into Russia have been granted only for products of dairies, agriculture, and handiwork. Yet the commercial relations with Russia have grown so that during the last two years the surplus in the whole import of the country, compared to the export, is to be attributed entirely to the trade with the Empire of Russia.

TRADE WITH THE UNITED STATES.

From a national-economical as well as mercantile-political point of view, it is of importance in relating the exchange of goods between the different countries to indicate the countries where the goods have been produced and where they are consumed. This is, by natural reasons, not always possible, at least for all kinds of goods, as many are not procured direct from the producing countries or sent direct to the consuming countries.

As a rule, it has been accepted that the last port from which the goods have been taken in by import, and the first port of unloading at export, are considered as the respective places of origin and destination. Hence it follows that although the commercial relations between the United States and Finland must be of considerable importance—at least a good deal of American goods are to be found in the trade here—yet in official statistics the trade is indicated as very slight and in uncertain figures, so that it will be impracticable to have them published, as they might be incorrect and misleading.

In 1902 only one vessel arrived from the United States direct to Finland, and only one vessel left from Finland for the United States. Only one ship carrying the colors of the United States has visited a Finnish port.

The principal American goods in the Finnish market are cotton, machine oil, flour, tobacco, resin and turpentine, hides, machines, implements, shoes, etc. A part of these goods comes via Copenhagen, by regular Danish steamers from New York. Some of the goods are also imported via Bremen and Antwerp, but for the greater part Hamburg and Hull are the ports of transit. Of all the American goods imported, flour is the highest in value, but according to the above-related statistical system it is impossible to give any exact figures.

Petroleum was formerly one of the main American articles in the commerce of Finland, but Russian oil, which is free from duty, is almost exclusively sold here now.

A very peculiar occurrence is shown in the import of American pork. In the year 1893 corned pork was imported for only a few thousand marks. In 1899 this import reached its highest point, when it amounted to 4,500,000 marks ($868,500).

To the people of Finland American pork is very acceptable and a good addition to their native food of breadstuffs; but hard times in Finland and higher prices in the United States have caused a decline in the import of this article, so that in 1902 the import amounted to only about 1,000,000 marks ($193,000).

A product of mechanical industry of American manufacture which is largely sold in Finland, and which seems to have conquered all competition, is the bicycle, yet changes in the fashions have much reduced the importance of this article nowadays. In 1899 bicycles were imported to the value of 1,400,000 marks ($270,200), but the imports in 1902 amounted to only 300,000 marks ($57,900).

American machines, particularly for agricultural and dairy purposes, are used throughout Finland. Recent hard times have not allowed an import of foreign articles, except the most necessary for consumption, and consequently the import of machinery has also declined. In 1902 the value of imported machines was 10,500,000 marks ($2,026,500), of which those intended for agricultural and dairy purposes represented 2,000,000 marks ($396,000).

For the reason that the principal articles of export from Finland consist of wood and agricultural products, there is no export worth mentioning from here to the United States.

It remains a question whether any direct measure could be worth the while to promote a more lively exchange of goods between the two countries, but at present, under prevailing circumstances, there seems to be but little probability for the success of such a measure. Beyond doubt the exporters here do all that is possible to find a paying market for their articles.

Perhaps something might be profited if direct purchases from American manufacturers were more common. Orders for goods are often answered by referring to the "European agent" of the firm, generally in England, by whom all the American business transactions with Europe seem to be conducted.

VICTOR EK,
Vice and Acting Consul.

HELSINGFÖRS, FINLAND, *July 30, 1903.*

MR. MOSELEY'S INDUSTRIAL INQUIRY.

(Translated in the Bureau of Statistics from a paper published by the Union of Metal and Mine Workers of France, dated August 12, 1903.)

Apropos of Moseley's second commission, composed of educators and scientific experts, which is about to visit the United States for the purpose of studying at first hand the forces and factors underlying America's success, the following discussion of the former commission, translated from a paper by the French Union of Metallurgical and Mining Industries, is just now of special interest:

Last year Mr. Alfred Moseley, an English business man, invited the secretaries of the trades unions of Great Britain to go with him to the United States for the purpose of seeing for themselves the rapid progress and enormous industrial development of that part of the world. He had been struck, in the course of his travels in America, with the gigantic powers of its production. He had seen with regret that in England neither employer nor employee was aware of the danger that was developed by a competition that was growing greater every day. It was to enlighten the workmen that he had organized the commission of inquiry commonly called the "Moseley Industrial Commission." The delegates left England, accompanied by Mr. Moseley, in October, 1902. There were twenty-three of them. They divided into two groups, one of which went direct to Canada and the other to New York. The delegates were to furnish individual reports and had absolute freedom as to form and expression of opinion. Mr. Moseley asked each to fill out answers to a series of forty-one questions submitted by himself. These were arranged under four subheadings, and related (1) to the early instruction given to workmen, (2) the relations existing between employers and employees, (3) to the general condition of the workmen outside of the industrial establishment in which they are employed, and (4) general questions. Twenty-two out of the twenty-three filled out the lists. These replies, etc., preceded by a report edited by Mr. Moseley, have appeared in a volume, of which the following is a fair, though brief, analysis. Separate copies, including the replies of each delegate, have been made for circulation among the workmen of the industries represented. A photographer accompanied the commission and took pictures of such things and places as were deemed of value to the report.

The lack of time, the thousand and one obstacles met with in so long and varied a trip, and the scanty preparation, due to haste and ignorance, led the members of the commission to confine themselves to their particular lines. Very few felt themselves capable of pronouncing a general judgment. Their reports are little better than notes at any time. All the information of a purely professional character we have to leave out, to take up the proportions that deal with the general conditions of America's industrial organization.* "In writing my impressions of America," one delegate says, "I am sensible of the difficulty, if not of the danger, of making general comparisons and of trying to draw conclusions. Our time was too limited and our field of exploration too vast to permit of a complete and detailed inquiry into the industrial, economic, and social conditions of a country like the United States of America."

Limiting our analysis of the work of the commission to its general conclusions, we omit, with that object in view, the replies made to the various questions and lay stress on the information which permits us to complete the first impressions obtained.

INSTRUCTION OF YOUTHFUL EMPLOYEES.

The opinion of the commission seems to be unanimous in regard to the value of the instruction given to the youthful employees in the United States compared with what is given to the same class in Great Britain and Ireland. All the delegates were impressed by the degree of general instruction received by the young people in American industrial concerns and by the facilities afforded—unknown in England—to obtain a secondary or even a higher education.

"My opinion is," says the delegate of the Manchester spinners, "that the young American is better equipped than the young Englishman for the battle of life by the preliminary education which he receives. The children of American workmen stay at school till they are 14, 15, or 16 years old, and in the latter years of their school life they acquire just such knowledge as fits them from their very entrance into industrial life to be useful to themselves and to their country. The children of the English working class leave school too soon."

The delegate of the tailors says: "The American school system is very much better than ours. In certain States the boys and girls are able to pass from the kindergarten to the higher schools without costing a dollar to their parents. In many States the frequentation of the universities even is gratuitous. England is a quarter of a century behind the age, and each year augments the difference." The delegate of the bookbinders confirms that judgment, for he says: "The system of education appears to be very well adapted to the wants of the nation. The ambition of a great number of workmen is to see their sons attain a fine position. This ambition is encouraged and aided by the facilities offered to the child who has a taste for study." "That ambition is so much the easier to understand," says the iron and steel delegate, "when one knows that the wages of the parents are much higher than in England. The wages of the little ones are not needed in the family." He cites a fact from the census of 1900 to show that the metal trades at that time did not employ more than 1,901 children under 16 years of age. Another delegate, visiting an ordinary school, found fully 50 per cent of the children remain there till their fifteenth year (the law compels them to stay till they are 14), and as many as 25 per cent of the children stay till they are 16 years old.

The delegate of the tailors says, further: "At home [in England] the poverty of the parents is responsible for the ignorance of the children. In America the poverty of the father is an added reason for the child to receive the best education the nation can give. The American nation is so impregnated with this point of view that I have heard employers express a certain repugnance to employing any child before its eighteenth year."

This, then, is the general instruction given to the children of the working classes. But when the delegates came to study the system of professional education and apprenticeship in the United States they generally gave the preference to their own country. It is, for example, the opinion of the delegate of the parliamentary committee of the trades unions that England leads in these lines. It seems to him that in America the professional schools serve the youth of the middle classes—young men destined to direct industrial establishments later—rather than the children of the working classes. He thinks that in this respect the position of the poor is better in England than in the United States. "The apprentice system," he says, "if it ever existed in the United States, is in a fair way to disappear. In the language of Samuel Gompers, president of the American Federation of Labor, the subdivision of work, resulting from the introduction of machinery, has killed apprenticeship. To-day it is necessary to get skilled labor in Europe, particularly in England." The delegate of the machinists and those of the shipbuilders are also of the opinion that the English system of apprenticeships is the best.

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*The quotations of the workmen may not be word for word like the text of Mr. Moseley's book, for it has been put back into English from the French translation.

The delegates of the bricklayers and plasterers say that professionally England is ahead of the United States. The delegate of the Sheffield cutlers (workingmen) also notes the lack of advantages enjoyed by apprentices in America. "The employers find," he says, "that the apprentices produce more weariness of spirit than they render services. The child leaving the school wants to earn money, and much of it, as soon as possible. Besides, the division of labor is so great that the European long term of apprenticeship is more rarely useful in the United States than in Europe."

THE WORK DONE BY MACHINERY.

The development of machinery and its extremely judicious utilization struck the delegates very forcibly. It appeared to them as one of the essential causes of the superiority of the United States in certain branches of industry. "The head of an American concern or undertaking, said in substance one of the delegates of the machinists, is endowed with a remarkable spirit of initiating; he is always ready to introduce into his establishment the very latest and most perfect machines. This spirit of initiating is, besides, a characteristic of the nation." The delegate of the printers said that at Chicago, as well as elsewhere, there is a feverish rivalry among the printers in incessant changing of machines. Often one has hardly been adopted before it is rejected to make place for another just invented or perfected.

Again, everyone is trying to reduce the manual labor to a minimum. "Everything that tends to reduce it," said the delegate of the leather industry, "is eagerly adopted." One can say the same of every industry. The search for processes to reduce the number of hands employed and yet keep up the amount produced, or even to increase it, is the constant effort of every American employer. The specialization of machines has attained such a degree that the delegates could not suppress their surprise; and yet, according to the delegates of the shipyards and of the textile industries, England is as well equipped in those lines as is the United States. The introduction of new machines and the degree of perfection secured in the equipment do not arouse any opposition on the part of the American workman; oftentimes they are received with favor. The work really becomes less troublesome and the former wages are never reduced; sometimes they are increased, and when not, the workman knows that they will be later. Here is what the typographical delegate has to say on this matter:

"I have spoken with the members and with the leaders of the Typographical Union of Chicago on the question of the machine and the results of its introduction into the trade. They were unanimously of the opinion that while at first the effect was disastrous to labor, the later results were higher wages and fewer hours of labor. Books have come down in price and the newspapers have increased in size; they all employ as many hands as ever."

Besides, the laborers participate in the improvement of the machines upon which they work. Employers encourage them to make improvements by compensating them liberally for inventions. Mr. Moseley goes into this matter to some extent in his report. "In many establishments," he says, "a box is set up somewhere into which ideas, plans, projects, etc., of the employees are thrown, the employers asking, by means of a little placard, that this be done. Suggestions as to improvement of machinery and as to improvements in administering the works are wanted, asked for, and often received. The contents of the box are examined regularly and many of the ideas suggested are tried. If they are adopted for good the inventor or party making the suggestion is rewarded, sometimes by a portion of the accruing profit or by an advance in position. Precautions are taken to preclude the possibility of anyone suffering from the jealousy of other employees or of the bosses."

The Americans know how to get the most from the machines incessantly perfected, incessantly renewed. Employers and employees are in accord to get the most possible out of them. There is no fear among the operatives working by the piece that their wages will be reduced when the production is increased. Rapidity of production is still further aided by the extreme division of labor and by a most skillful manipulation of the equipment.

CONDITIONS OF LABOR, HYGIENE, ETC.

The reports of the commission do not permit of an exact estimate of the rates of wages in the United States compared with those prevailing in England. Still, it is very evident that the wages in America are higher than in England. Some delegates say the difference is fully 50 per cent in favor of the United States; others put the difference as high as 100 per cent. "The American employer," said one delegate, "understands that the laborer at low wages is the dearest labor, and he is not afraid to say so."

The delegates were almost unanimously of the opinion that the working hours per week were much longer in the United States than in England. The following table tells its own story of the relative hours of labor in the two countries:

Professions or trade.	Duration of labor.	
	In the United States.	In Great Britain.
Workers at blast furnaces	12 hours per day	8 hours per day in the North; 12 hours in the Midlands and in southern Wales.
Iron founders	9½ hours (average) per day	9 hours per day.
Mechanics	56 hours per week	52 hours per week.
Iron-ship builders	48 to 60 hours per week	Less per week than in the United States.
Shipwrights	10 hours per day (58 hours per week).	Generally speaking, the hours of labor are 6 or 7 hours per week less than in the United States.
Cutlers	10 hours per day	9 hours per day.
Makers of hardware	do	Do.
Cotton spinners:		
North	55 hours per week	
South	66 to 72 hours per week	55 hours per week.
Weavers:		
North	58 to 60 hours per week	
South	72 hours (average) per week	55 hours per week plus half an hour for cleaning machines.

Professions or trade.	Duration of labor.	
	In the United States.	In Great Britain.
Clothing makers	8 to 12 hours per day	The same hours daily as in the United States, except Saturdays, when work ceases at noon.
Factory boot and shoe makers	54, 56, and 60 hours per week	52½ to 54 hours per week.
Tanners	Generally 60 hours per week	About 4 hours per week less than in the United States.
Bricklayers	44 to 48 hours per week	
Plasters	2 hours per day less than in England.	
Carpenters and cabinetmakers	Varies from 44 to 60 hours per week.	
Makers of furniture in factories	54 to 60 hours per week (two exceptions—New York, 44 hours; Pittsburg, 48 hours).	52 hours on an average per week.
Paper makers	Varies	Surely shorter in England than in the United States.
Lithographers	53 hours per week	50 to 53 hours per week.
Bookbinders	54 hours per week	

Here is an opinion on the same point given by the delegate of the parliamentary committee of the congress of trades unions:

"In the United States," he says, "the hours of labor are in some cases longer than in England; in no case shorter."

The commission came to no general conclusion or opinion as to whether piecework or day labor dominates the United States. The list of questions contained, among others, the following interrogatory: "Does the American produce, on an average, more or less in an hour than the English workman?" The delegates are of the opinion in general that the American does not exhaust himself any more at his work than does the English workman, but that his productivity is greater because of the mechanical arrangements and the better methods of manipulation found in America. Many of the delegates say that they had always heard the intensive production (of America) talked about, but had never heard a word of the conditions under which it took place. They were led to believe that the American workman was worked to death, always at a high pressure, obliged to carry on his work at a rate that led to premature old age. They found that tale a myth; that the American workman does not exhaust himself any more at his work than does the British workman, nor does he grow old any earlier or faster; furthermore, when their forces or powers are enfeebled, instead of being sent away, as happens too often in England, they are given lighter work. The delegate of the bricklayers was the only one of the twenty-three who seemed to believe that the American workmen were dealt with in a usurious spirit. He is of the opinion that what he says in regard to bricklayers will hold good not only in the building trades, but in all others.

In the list of questions one finds the following: "When those who are paid by the piece (pieceworkers) increase their individual production by means of their own skill or personal activity, do the American employers reduce their salaries in order to hinder the workmen from getting more than a certain sum?" The replies were to the effect that the employers are ever busy increasing the means of augmenting their own production, and they are too well pleased to see the individual workmen increase their output to risk a diminution of their wages. "In

America," says the delegate of the iron and steel men, "the idea is general that the thing to do is to reduce the cost of production by perfecting the methods and increasing the output, and never by lowering wages." The delegate of the iron-molders says: "As far as I was able to see, the employers do not diminish the wage rate; they are convinced that the more the workman makes the greater is the advantage to the employer."

HYGIENIC CONDITIONS.

In regard to the protective hygienic measures in American industrial concerns, the delegates differ entirely. The delegate of the machinists saw only di ty, unhealthy workshops, where the workmen were cooped up in close quarters, and whose only advantage was that they are well warmed in winter and well provided with fresh air in summer. Some say the textile factories and boot and shoe shops in England are much better organized from the point of view of health or hygiene. Other delegates believe and say that the American establishments are far superior to the English. The delegate of the tailors says that in England one does not approach the best American shops in the matter of hygiene, ventilation, light, and general comfort. Finally, some of the delegates are in doubt and put forth their opinions under different distinctions and with considerable reserve. Almost all the delegates, however, are of the opinion that in the United States the relations between employers and employees are much easier and better than in the United Kingdom. The proprietors are easier to approach; they meet their men voluntarily with a great deal more of personal familiarity. The opinion of the delegate of the cotton spinners may be taken as the average for all: "The American employers seem to be penetrated with the sentiment of their responsibility in regard to the people under them. They are decidedly opposed to all kinds of tyrannical and despotic treatment of their help on the part of those in charge." Another delegate says: "One point which struck us forcibly is the absence of those class distinctions which exist in England, and that absence manifests itself especially in the relations between employers and employees. The workman is not considered as a part of the machinery of the concern. He is not regarded as one who should be thankful for the employment given him. On the contrary, one sees in him a member of the house often taken into confidence in regard to the things which concern his particular branch." To still further characterize the attitude of the American employer, the good things said about the stability of wages for piece-workers and about the fair treatment accorded to workmen who invent or suggest mechanical or any kind of improvements, etc., are enumerated.

To the opinion expressed by the delegates in regard to the relations existing in the United States between employer and employee, one ought to add the opinion of the National Civic Federation of Labor. They were asked to sign a document in favor of creating such a federation in England, but the examination of the individual reports permits of only one opinion—that there is only a lively interest in or sympathy for the American institution, many of the delegates showing by what they wrote and said that they had only a very superficial idea of what it actually is.

RÉSUMÉ AND CONCLUSIONS.

A part of the list of questions—numbers 15 to 41—deal with the general conditions of the workman at home or outside the limits of the workshop. They do not seem to furnish the elements of a sufficiently exact appreciation to be very valuable. It seems evident, however, that in the United States the cost of living is no dearer than in England, if it is not less. Rents, custom-made clothing, and articles of luxury and pleasure are dearer. On the other hand, the American drinks and plays much less than the English workman; he likes to have more comfort in his home.

The general conclusions arrived at by the delegates are as follows:

America's superiority is based first of all upon the abundance and variety of its natural resources; upon the size or extent of its own market, whose demands are mostly supplied by American farmers and manufacturers, who in some cases are the only parties offering for sale, and for which the industrial leaders have worked almost exclusively up to the present time. Finally, the American manufacturers have been wise enough to make a marvelous use of machinery. They have perfected it unceasingly, specialized it in such a way as to get it to do more and more of the work of men, and have ransacked their brains for ways to get out of it a maximum of product. And in all these efforts they have had the decided support of their help.

The delegates say it is toward this judicious utilization of the machine that the English industries ought to direct and extend all their efforts. It is only by so doing that England will be able to compete with that American competition that is menacing the world. Success will depend upon the English manufacturers. It is necessary for them to abandon the commercial routine, to be on the watch for all kinds of mechanical devices, improvements, etc., and to be ready to adopt them as soon as possible. They must not forget that they have at their disposal a working class whose economic value equals, if it does not surpass, that of America's working class.

"As a matter of fact," says the delegate of the iron molders, "the British employer has more to learn in America than has the British workman." And the delegate of the parliamentary committee of the trades unions says: "The English workman has nothing to learn in America, but it is far otherwise with the employers. I do not pretend to say that we are superior to the Americans in all lines, but I do say this, that in the markets of the world we will not be beaten when it comes to good, solid work, well finished and durable. Our employers ought to understand that their laborers mean as much to them as their capital, or as associates in their undertaking, and that the success or failure of an enterprise depends as much upon the one as upon the other. If they treat labor fairly they will have nothing to fear from American or other competitors, for high wages benefit the employer as much as they do the laborer. The Americans know this and act accordingly. It is the secret of their success. Here [in England] the trade unions have been accused of driving industries out of England, yet the same forces that affect us affect the Americans. They affect them even more, for trades unionism is gaining ground rapidly on the other side of the Atlantic. It is manifesting itself as a purely individual and fighting force. And yet America continues to advance."

OPPORTUNITY FOR AMERICAN CONTRACTORS IN ITALY.

The Department of Commerce and Labor is in receipt of information from the Italian embassy to the effect that tenders are being asked for in connection with the building of the Pugliese aqueduct. The work is to cost about $25,000,000 and is to be finished in ten years from date of concession. The concession is for ninety years.

Foreign firms may participate in the contest. Applications must be sent to the Ministero dei Lavori pubblici, Divisione I (Uffici Contratti), Roma, Italia, and must bear on the envelope the words "Offerta per asta—Concessione dell' Acquedotto Pugliese," and are to be accompanied by the documents put down in the advertisement for bids. Bids must be in the office noted above not later than October 31. The concession will be awarded in Rome on February 1, 1904.

A copy of the law, rules, and form governing the proposals—also a copy of provisional plan for the construction of the aqueduct—are on file in the Bureau of Statistics, Department of Commerce and Labor, where they may be seen by interested parties.

EXTENSION OF BRITISH COLONIAL PREFERENTIAL TARIFFS.

(Prepared in the Bureau of Statistics, Department of Commerce and Labor.)

The Canadian plan of preferential tariffs in favor of Great Britain and the British colonies is now being adopted in the British colonies of South Africa. The Canadian parliament in 1897 passed an act giving to the merchandise imported from the United Kingdom and certain British colonies a reduction of 25 per cent in the rates of duty, one-half of that reduction to go immediately into effect and the other half to go into effect on July 1, 1898. In 1900 this law was so amended as to make the total reduction of tariff on goods from the United Kingdom and certain British colonies 33⅓ per cent, and this law now governs in the importation of goods into Canada. Under the law the importation of merchandise from the United Kingdom increased from $32,979,742 in the fiscal year 1895–96 to $56,000,000 in the fiscal year 1902–3.

This general principle is now to be applied in the British colonies in South Africa. A conference of representatives of the various colonies and territories of South Africa was held at Bloemfontein, in South Africa, in March last and a form of tariff recommended which gives to merchandise from the United Kingdom and the British colonies lower rates of duty than those imposed upon like articles from other countries. This plan was recommended to the various colonies, and their legislative bodies have, one by one, assented to it, until it has now been adopted and put into operation in Cape Colony, Natal, Transvaal, Orange River Colony, Rhodesia, Basutoland, and Bechuanaland, or, in other words, all British territory in South Africa. The act creates a new general tariff for the South African customs union, but, after naming the rates of duty on the various articles and classes, adds the following statement:

ARTICLE III—PREFERENTIAL ARTICLE.

A rebate of customs duties shall be granted on any goods or articles the growth, produce, or manufacture of the United Kingdom imported therefrom into the union for consumption therein to the extent following.

(*a*) In the case of goods and articles liable to customs duty under Class I, II, or V, a rebate of 25 per cent of any duty chargeable thereon at an ad valorem rate but of no other duty; and

(*b*) In the case of goods and articles liable under Class III to duty at an ad valorem rate of 2½ per cent, a rebate of the whole of such duty:

Provided, That the manufactured goods and articles in respect of which such rebate as aforesaid shall be granted shall be bona fide the manufactures of the United Kingdom, and that in the event of any question arising as to whether any goods or articles are entitled to any such rebate as aforesaid, the decision of the minister or other executive officer in whom the control of the customs department immediately concerned is vested shall be final.

ARTICLE IV.

A rebate similar to that for which provision is made in the last preceding article shall be granted in like manner and under like provisions to goods and articles the growth, produce, or manufacture of any British colony, protectorate, or possession granting equivalent reciprocal privileges to the colonies and territories belonging to the union, provided that no such rebate shall be granted in the case of any particular colony, protectorate, or possession until on and after a date to be mutually agreed upon and publicly notified by the parties to this convention.

Classes I, II, and V, upon which the above rebate of 25 per cent of the duty is authorized on articles coming from the United Kingdom and the colonies, include practically all classes of food stuffs, tobacco, spirits, and certain manufactures; Class III, upon which the entire ad valorem rate of 2½ per cent is removed, includes all other manufactures except those included in the free list. The entire tariff and the article stating the preferential rates given on the various classes herewith follow. It will be seen by an examination of the above statement of the preferential rates that the reduction of duty in favor of the United Kingdom and the colonies extends to practically all the imported articles upon which any duty is collected. In a large proportion, this reduction on articles from the United Kingdom and the colonies is 25 per cent of the tariff rate, while in a smaller proportion the entire duty of 2½ per cent ad valorem is removed in favor of goods from the United Kingdom and its colonies, but in both cases the regular duties are retained as to other countries.

This new tariff, with its reduction in rates of duty on merchandise from Great Britain and the colonies, has been already put into operation, and instructions with reference to the application of the law are being given by the British authorities of the Colonial Office in London and in the colonies. The plans adopted by which exporters in England and in the colonies obtain the benefit of the reduced rates are similar to those applied with reference to the reduction given by Canada on goods from the United Kingdom and the colonies, as is shown by the statements from the British South African Export Gazette, printed herewith.

The table which immediately follows shows exports from the

United Kingdom and United States, respectively, to the territory affected by the above-named reduction of rates in each year from 1893 to 1903. Owing to the fact that all exports from the United States to British territory in Africa were, prior to 1903, grouped under the single designation of "British Africa," it is not practicable to show in precise terms the exports to British South Africa, but the fact that about 90 per cent of the exports to British Africa now go to the territory designated as British South Africa renders the figures approximately accurate—at least sufficiently so to indicate the rate of growth of shipments from the United States to the territory in question and to enable a comparison of the relative magnitude and growth of the exports to that section from the United Kingdom and United States, respectively:

Exports from the United Kingdom and the United States to British South Africa, 1893 to 1903.

Year.	From United Kingdom.	From United States.*
1893	$45,530,000	$3,688,999
1894	43,981,967	3,983,883
1895	55,787,611	5,203,378
1896	72,441,259	11,290,995
1897	70,016,768	13,096,643
1898	63,983,282	12,027,142
1899	59,416,558	15,155,610
1900	68,092,554	16,269,482
1901	94,171,023	21,654,458
1902	125,833,577	28,780,105
1903	....	33,788,629

* Includes exports to all of British Africa, of which about 90 per cent is to British South Africa.

FORM OF CERTIFICATE REQUIRED FOR BRITISH GOODS SHIPPED TO SOUTH AFRICA.

[From South African Gazette of August 7, 1903.]

We are officially informed by the London Chamber of Commerce that the appended letter has been received from the Colonial Office in reply to a communication from the South African trade section relative to declarations as to origin for goods shipped to South Africa:

"SIR: I am directed by Mr. Secretary Chamberlain to acknowledge the receipt of your letter respecting the declarations as to origin for goods shipped to South Africa.

"2. In reply, I am to inform you that Mr. Chamberlain understands that British firms wishing to take advantage of the rebate of customs duties [on British goods] imported into South Africa, should, in order to satisfy the proper customs officers in South Africa that their goods are of British origin, observe the procedure adopted in Canada, and that certificates of origin similar to those required by the Canadian government will be accepted by the customs authorities of the South African union.

"3. I am to inclose a copy of the draft regulations framed under the provisions of the customs union bill which have been published in Natal.

"4. Mr. Chamberlain has no definite information as to the first question raised in your letter, viz, Whether it is necessary to supply, in addition to the merchant's declaration, the original signed invoices of manufacturers. An inquiry on the point is, however, being addressed to the high commissioner for South Africa by telegraph.

"5. In reply to the second question raised in your letter, I am to inform you that it is impossible to state definitely when the conventional tariff will come into force, as it has not yet been ratified by the legislatures of all the parties to the convention.

"I am, sir, your obedient servant,

"R. L. ANTROBUS."

We are also officially informed by the Johannesburg Chamber of Commerce that, having conferred with the secretary of the Transvaal customs department and the acting collector of customs as to the form in which the declaration is to be made of the origin of goods intended for the Transvaal under the new British preferential tariff, which came into force on the 20th ultimo, the department have notified that they will accept either—

1. A statement on the invoices, or otherwise, signed by the supplier and certifying the goods to be the growth, produce, or manufacture of the United Kingdom; or
2. A certificate as to origin of goods signed by the manufacturer.
3. Failing these the customs department will require such other evidence as they may deem necessary.

With regard to these certificates, they may be made on a separate form, but in that case particulars as to marks, numbers, and value must be given so as to identify goods entered on the invoices. In connection with the words "the manufacture of Great Britain," goods will be accepted as coming within that category if the bulk of the processes of the manufacture is certified to be British. In reference to goods which are now on the water, or which have been dispatched before instructions can be received by exporters, we understand the customs department will exercise a reasonable discretion.

PREFERENTIAL TARIFF INVOICES FOR RHODESIA.

The Rhodesian administration having signed the customs union convention, merchants are hereby informed that invoices for Rhodesia on which the preferential allowance on British goods is claimed must be made out on a form similar to that demanded by the Canadian government for preferential goods. The text of this form is to the following effect:

Form of certificate prescribed to be stamped, printed, or written on invoices.

I, (name of person signing certificate), hereby certify that I am (insert the words partner, manager, chief clerk, or principal official, giving rank, as the case may be), of (name of exporter, with address), the exporter(s) of the articles included in this invoice, and that I am duly authorized to make and sign this certificate on behalf of the said exporter(s) ——.

I have the means of knowing and I do hereby certify that this invoice from the said (name of exporter) to (name of party to whom articles invoiced), amounting to (insert in words at length the value of the invoice), is true and correct; that all the articles included in the said invoices are bona fide the produce or manufacture of one or more of the following countries, viz: (names of countries where articles have been produced or manufactured, being countries entitled in South Africa to the benefits of British preferential tariff), and that a substantial portion of the labor of one or more of such countries has entered into the production of every manufactured article included in the said invoice to the extent in each article of not less than one-fourth of the value of every such article in its present condition ready for export to ——.

(Signed) —— ——.

Dated at —— this —— day of —— 190 .

SOUTH AFRICAN CUSTOMS UNION TARIFF, 1903.

Class I.—Special rates.

Article.	Unit.	Rate.			
		£	s.	d.	
1. Ale, beer, and cider, all kinds of strength exceeding 3 per cent of proof spirit (and in addition 10 per cent ad valorem). (NOTE.—Vide Article XVII of convention.)	Imperial gallon	0	1	6	$0.365
2. Acetic acid	do	0	3	0	.73
3. Animals, viz:					
(*a*) Cattle for slaughter	Each	1	10	0	2.43
(*b*) Sheep for slaughter (NOTE.—Vide Article XIII of convention.)	do	0	5	0	1.22
4. Beads, known as "Kaffir beads"	Pound	0	0	6	.12
5. Blasting compounds, including all kinds of explosives suitable and intended for blasting and not suitable for use in firearms, and collodion cotton not intended for manufacturing purposes. (NOTE.—Vide Article XVII of convention.)	do	0	0	1½	.03
6. Butter, butterine, margarin, ghee, and other substitutes for butter.	do	0	0	2	.49
7. Chicory and substitutes for coffee or chicory	do	0	0	2	.49
8. Coffee:					
(*a*) Raw	do	0	0	0¾	.015
(*b*) Roasted, ground, or mixed	do	0	0	2	.04
9. Cocoa and chocolate, unsweetened	do	0	0	1	.02
10. Cocoa and milk, chocolate and milk, coffee and milk	do	0	0	1	.02
11. Condensed, desiccated, or preserved milk or cream	do	0	0	0½	.01
12. Coals	Ton of 2,000 pounds	0	3	0	.73
13. Coke and patent fuel	do	0	2	0	.49
14. Confectionery, including sweetened cocoa or chocolate, honey, jams, jellies, preserves, sweetmeats, candied or preserved ginger or chowchow; and all other kinds compounded, made, or preserved with sugar, but not including purely medicinal preparations properly classed as apothecary ware.	Pound	0	0	2	.04
15. Corn and grain, viz, barley, maize, millet, oats, rye, wheat, beans, and pease:					
(*a*) In the grain, or (*b*) crushed, flaked, ground, hulled, malted, pearled, split, or otherwise prepared, except oats not in the grain and bran.	100 pounds	0	1	0	.24
(*c*) Flour, wheaten, or wheaten meal, including pollard. (NOTE.—Vide Free List and Article XV of convention.)	do	0	2	0	.49
16. Dates	Pound	0	0	0½	.01
17. Fish, cured, dried, pickled, preserved, pressed, or smoked, not being of South African taking.	do	0	0	1	.02
18. Fodder, viz, chaff, hay, lucern, oat hay, and other fodder, not otherwise described, but not including bran.	100 pounds	0	1	0	.24
19. Fruits, preserved, of all kinds, bottled, tinned, or otherwise preserved, including pulp and candied peel.	Pound	0	0	2	.04
20. Fruits, dried, of all kinds, including almonds and nuts	do	0	0	2	.04
21. Gunpowder and other explosives suitable for use in firearms (and in addition 10 per cent ad valorem).	do	0	0	6	.12
22. Guns and gun barrels, firearms:					
(*a*) Single	Barrel	1	0	0	4.866
(*b*) Double and other (And in either case in addition 10 per cent ad valorem.)	do	0	15	0	3.65

Class I.—Special rates—Continued.

Article.	Unit.	Rate.			
		£	s.	d.	
23. Meats, including lard, fats, soups, and other similar substances used as food, but not including extracts and essences or tallow.	Pound	0	2	1	$0.51
(Vide Article XIII of convention.)					
24. Matches:					
(*a*) Wooden—					
In boxes or packages of not more than 100 matches.	Gross of boxes or packages.	0	2	0	.49
In boxes containing more than 100 but not more than 200 matches.	do	0	4	0	1.095
And for every 100 additional matches in boxes or packages.	Gross of 100 matches.	0	2	0	.49
(*b*) Fusees, vestas or wax matches, or other patent lights used as such—					
In boxes or packages containing not more than 50.	Gross of boxes or packages.	0	2	0	.49
In boxes or packages of more than 50 but not more than 100.	do	0	4	0	1.095
And for every 50 additional in boxes or packages.	Gross of 50 matches.	0	2	0	.49
25. Onions, not preserved	Pound	0	0	0½	.01
26. Pickles, sauces, chutneys, chiles, and other condiments	do	0	0	2	.04
27. Pistols and revolvers (and in addition 10 per cent ad valorem).	Each	0	5	0	1.22
28. Soap, not including toilet soaps and soap powders and extracts.	Pound	0	0	0½	.01
(NOTE.—Vide Article XVIII of convention.)					
29. Spices and tumeric	do	0	0	2	.04
30. Spirits:					
(*a*) Perfumed	Imperial gallon	1	0	0	4.866
(*b*) Liqueurs and cordials exceeding 3 per cent of proof spirit.	do	0	15	0	3.65
(*c*) Other sorts exceeding 3 per cent but not exceeding the strength of proof by Sykes' Hydrometer, and so on in proportion for any greater strength.	do	0	15	0	3.65
(And in addition 10 per cent ad valorem on all the above classes of spirits.)					
(NOTE.—Vide Article XVII of convention.)					
31. Sugar:					
(*a*) Not refined, golden sirup, molasses, saccharum, and treacle.	100 pounds	0	3	6	.85
(*b*) Refined	do	0	5	0	1.22
(NOTE.—Vide Article V of convention.)					
32. Tea	Pound	0	0	4	.08
33. Tobacco:					
(*a*) Cigars and cigarillos	do	0	6	0	1.46
(And in addition 10 per cent ad valorem.)					
(*b*) Goorak or goorakco, and hookah mixture, and all imitations or substitutes.	do	0	6	0	1.46
(*c*) Snuff	do	0	4	0	.97
(*d*) Cigarettes	do	0	4	0	.97
(And in addition 10 per cent ad valorem.)					
(*e*) Manufactured and cut	do	0	3	6	.85
(*f*) Manufactured but uncut	do	0	3	0	.73
(*g*) Not manufactured but stemmed	do	0	2	6	.61
(*h*) Not manufactured and unstemmed	do	0	2	0	.49

Class I.—Special rates—Continued.

Article.	Unit.	Rate.	
34. Vinegar:			
(*a*) Of standard strength, fit for immediate use as such (*i. e.*, requiring no more than 40 grains of bicarbonate of potash to neutralize 1 ounce Troy)—		£ s. d.	
(1) In bottles or other vessels of the capacity of not more than 1 imperial quart.	Imperial gallon	0 1 0	$0.24
(2) In larger vessels or in bulk	do	0 0 6	.12
(*b*) Concentrated extract or essence of greater strength than above.	do	0 3 0	.73
35. Wine:			
(*a*) Still wines not exceeding 20 per cent of proof spirit	Imperial gallon	0 4 0	.97
(*b*) Still wines exceeding 20 per cent, but not exceeding 50 per cent of proof spirit.	do	0 8 0	1.95
(*c*) Sparkling wines	do	0 12 6	3.04
(And in addition 10 per cent ad valorem on all the above classes of wine.)			
NOTE.—Wines containing less than 3 per cent of proof spirit are not included in the above, and wines containing more than 50 per cent of proof spirit are classed as spirits.			
(NOTE.—Vide Articles III (*a*) and XX of convention.)			

Class II.—Mixed ad valorem rates.

Article.	Unit.	Rate.	
		£ s. d.	
36. Bicycles, tricycles, and velocipedes and parts thereof	£100 ($486.65) value	21 10 0	$104.63
37. Blankets and sheets or rugs, cotton or woolen, or manufactures of cotton and wool, commonly used as cotton or woolen blankets or rugs, the single article, in pairs or in the piece; and coats, jackets, or other apparel made of blanketing or baize.	do	25 0 0	121.66
38. Bonbons, surprise packets, and crackers and other similar fancy confectionery.	do	25 0 0	121.66
39. Cards, playing	do	25 0 0	121.66
40. Carriages, carts, coaches, wagons, and all other wheeled vehicles not elsewhere described, intended for the conveyance of persons or goods, including finished parts thereof, not being metal parts not usually made in the union, but required in the manufacture of wheeled vehicles therein, but not including bath chairs, perambulators, toy carts, store trucks, or barrows.	do	12 10 0	60.83
41. Extracts and essences of all kinds for flavoring or perfumery, including saccharine.	do	25 0 0	121.66
42. Fireworks of all descriptions	do	25 0 0	121.66
43. Medicines, patent or proprietary	do	25 0 0	121.66
44. Motor vehicles, including their parts, and motor cycles, but not including traction engines and power lorries.	do	5 0 0	24.33
45. Oils, essential or perfumed	do	25 0 0	121.66
46. Perfumery, cosmetics, dyes, powders, and soap, and other preparations for toilet use, and soap powders and extracts.	do	25 0 0	121.66
47. Shawls	do	25 0 0	121.66
(NOTE.—Vide Articles III (*a*) and XX of convention.)			

Class III.—Ad valorem 2½ per cent.

48. Acids, nitric and sulphuric.

49. Asbestos packing and boiler composition.

50. Assay apparatus.

51. Bands and belting of all kinds for driving machinery, boiler tubes, bolting cloth, and mill silk.

52. Battery cloth and baize, gauze, matting, sieving, and screening for use in connection with machinery and apparatus.

53. Bolts, nuts, and rivets.

54. Bottles and jars of common glass or earthenware, and bottles ordinarily used for aerated waters, empty.

55. Chain for hauling.

56. Chimneys, metal (smokestacks).

57. Corks and bungs and corkwood unmanufactured.

58. Cranes, elevators, and shears.

59. Crucibles, cupels, cupelling furnaces, ingot molds, retorts, and furnaces for roasting minerals.

60. Cyanide of potassium.

61. Fire escapes and fire hose and hose reels.

62. Hose, steam, suction, and armored (not including garden) for use in connection with machinery and apparatus.

63. Machinery, not elsewhere described, to be driven by cattle, electric, gas, heat, hydraulic, pneumatic, steam, water or wind power, including spare parts; and apparatus and appliances used in connection with the generating and storing of electric power or gas; electric cable or wire and the posts for carrying the same; lamp-posts and their fittings.

64. Mining buckets, skips, trucks, and tubs, wheeled or otherwise, for hauling on rails or wires.

65. Packing and lagging for engines, machinery, and piping.

66. Pipes, piping, and tubes of all kinds for gas, steam, drainage, sewerage, irrigation, water supply or pumping, not including down piping and guttering or cocks and taps.

67. Railway construction or equipment requisites, as follows: Rails, sleepers, fastenings for rails or sleepers, girders, iron bridge work, culvert tops, locomotives, tenders, ballast trucks, goods wagons, carriages, trollies, engine water tanks, turntables, permanent or fixed signals, and weighbridges.

68. Rubber for use in connection with machinery and apparatus.

69. Tanks and vats suitable and intended for mining purposes.

70. Telegraphs and telephones: Materials and instruments for use in construction and working of telegraph and telephone lines.

71. Traction engines and power lorries.

72. Tramway construction and equipment requisites, as follows: Rails, sleepers, fastening for rails or sleepers, iron gates, girders, iron bridge work, culvert tops, cars, trollies, water tanks, and turntables.

73. Wire and wire netting for fencing; droppers, gates, hurdles, posts, standards, strainers, staples, stiles, winders, and other materials or fastenings of metal ordinarily used for agricultural or railway fencing; and baling wire.

74. Wire rope. (NOTE.—Vide Articles III (*b*) and XX of convention.)

Class IV.—Free.

75. Agricultural implements and machinery and all apparatus and plant usually and principally employed in farming operations; binding twine and harvest yarn.

76. All raw produce of South Africa and animals bred in South Africa imported into the union overland.

77. All animals bred and articles grown, produced, or manufactured within the union, except—

(*a*) Flour, wheaten, or wheaten meal, including pollard, manufactured from other than South African wheat.

(*b*) Spirits beer, or blasting compounds, distilled or manufactured in the union, should a duty be imposed under Article XVII of the convention.

78. Ambulance materials imported by recognized associations, corps, or hospitals lawfully established for instruction or drill in first aid to the wounded.

79. Anchors and chain cables for the use of ships, tugs, or lighters.

80. Animals, living, except cattle and sheep for slaughter. (Vide Article XIII of the convention.)

81. Arms, ammunition, appointments, and uniforms for the regular military, naval, or volunteer imperial or colonial forces of His Majesty.

82. Atlases, charts, globes, and maps.

83. Bags for flour, grain, manure, produce, sugar, wool, coal, and minerals not including paper bags; and bagging and sacking in the piece.

84. Band instruments and stands, the bona fide property of any government belonging to the union or of a regular military or volunteer corps and not the property of individuals.

85. Bones, feathers, ivory, hair, hoofs, horns, shells, skins, teeth, wool, and other parts of animals, birds, fishes, or reptiles, not being manufactured, polished, or further prepared than dried and cleaned, but in their raw and unmanufactured state.

86. Bookbinders' requisites, consisting of boards, cloth, leather, marble paper, skin, thread, tape, vellum, webbing, and wire.

87. Books and music, printed, including newspapers and periodicals, not being foreign unauthorized prints of any British or South African copyright work.

88. Borax, bromine, litharge, manganese, dioxide, and quicksilver.

89. Bottles and jars of common glass or earthenware imported full of any article liable to a rated duty.

90. Boxes (empty), cardboard and wooden, put together or in pieces or shooks for packing; and staves.

91. Brass and copper and composition metal, in bars, ingots, plates, and sheets, plain, including perforated, but otherwise unmanufactured.

92. Bullion, coin, specie, bank notes, and other paper currency.

93. Carriages, carts, wagons, and other wheeled vehicles, the manufacture of South Africa, imported into the union overland.

94. Church decorations, altars, bells, fonts, lecturns, pulpits, organs, plate or vestments, and illuminated windows imported by or for presentation to any religious body.

95. Coir, candlewick, cotton, flax, fiber, flock, hemp, and jute, raw, waste, or unmanufactured.

96. Collodion cotton, glycerin, and nitrites for manufacturing purposes.

97. Cups, medals, and other trophies imported for presentation, or presented as prizes at examinations, exhibitions, shows, or other public competitions, for excellence in art, bravery, good conduct, humanity, industry, invention, manufactures, learning, science, skill, or sport, or for honorable or meritorious public services; provided that such articles shall on importation or delivery free from the customs bear engraved or otherwise indelibly marked on them the name of the presenter or presentee and the occasion or purpose for which presented.

98. Consular uniforms and appointments and printed official consular stationery.

99. Cork dust, paper shavings, sawdust, husks, and other waste substances intended and suitable for use only as packing material.

100. Diagrams, designs, drawings, models, and plans.

101. Diamonds and other gems or precious stones in their rough state.

102. Dye nuts, gambier, myrobolans, sumach, valonia, and other dyestuffs, for leather.

103. Engravings, lithographs, and photographs, and enlargements or reproductions of the same.

104. Fire clay, terra alba, and fire bricks.

105. Fish (fresh), and fish ova; also dried, cured, or salted fish and raw fish oil of South African taking.

106. Fruit, fresh or green (including cocoanuts).

107. Fruit and other produce, driers or evaporators of.

108. Glue.

109. Guano and other substances, animal, mineral, or vegetable, artificial or natural, suitable for use as fertilizers or manures.

110. Haircloth and springs for furniture.

111. Ice.

112. Iron and steel, angle, bar, channel, hoop, rod, plate, sheet, or T; plain, including perforated and galvanized; rough and unmanufactured, not including corrugated sheets.

113. Launches, tugs, and lighters; provided that when condemned or landed to be broken up, duty shall be paid at the customs on the hull and all fittings according to the tariff that may then be in force.

114. Lead, bar, pipe, sheet, foil, and acetate of.

115. Leather, patent, enameled, roan, and morocco and pigskin in the piece and valve hide.

116. Lifeboats, belts, and buoys and other life-saving apparatus imported by any recognized society.

117. Metal of all sorts in bars, blocks, ingots, and pigs for founding, not elsewhere described.

118. Paintings, pictures, picture books, and etchings.

119. Paper ordinarily used for printing books, pamphlets, newspapers, and posters, or for lithographic purposes.

120. Potash and soda, carbonate, bicarbonate, caustic, crystals, and silicate.

121. Printing and lithographic inks.

122. Printing, lithographing, paper-cutting, folding, numbering, and perforating machines or presses; blocks, forms, fonts, plates, rollers, stones, and type; and other apparatus suitable only for use in the bookbinding or printing industries.

123. Public stores, imported or taken out of bond by and bona fide for the sole and exclusive use of the Government of His Britannic Majesty and of any government belonging to the union, provided that a certificate be delivered to the customs authorities, given under the hand of an officer approved of by the principal officer of customs, setting forth that any duty levied on such public stores would be borne directly by the Government; and provided further that no portions of such stores used or unused shall be sold or otherwise disposed of so as to come into the possession of or into consumption by any persons not legally entitled to import the same free of duty, without the consent of the principal officer of customs and the payment of the duties to him by the officer so selling or disposing of such public stores.

124. Rattans, cane, and bamboo, unmanufactured.

125. Resin and carbonate of ammonia.

126. Saddletrees.

127. School furniture and requisites, being all articles certified by the superintendent-general of education, or any official appointed for that purpose in any colony or territory in the union, to be for use in any school.

128. Sculpture, including casts or models of sculpture.

129. Seeds, bulbs, plants, and tubers for planting or sowing only, under such regulations as regards edible kinds as the customs authorities may impose to safeguard the revenue against diversion into ordinary consumption.

130. Sheep dip, sheep-dipping powders, materials suitable only for dip, and dipping tanks.

131. Specimens illustrative of natural history and exhibits for public museums.

132. Sprayers and sprinklers and other apparatus for destroying pests or diseases in stock, plants, or trees.

133. Sulphur and other substances for destroying pests or diseases in stock, plants, or trees; and disinfectants.

134. Thread, boot and shoe makers', saddlers' and sailmakers'; and seaming twine.

135. Tin and zinc, bar, plate, or sheet, plain or perforated, but otherwise unmanufactured.

136. Tobacco, the produce of South Africa, imported into the union overland.

137. Vaccine virus, toxine, and serum.

138. Vegetables, fresh or green, but not including potatoes or onions.

139. Water-boring and pumping apparatus.

140. Wax, viz, paraffin and stearin and stearin grease ordinarily used in the manufacture of candles.

141. Wine presses and wine pumps.

142. Wood meal.

143. Wool, straw, hay, and forage presses.

Class V.—General ad valorem rate 10 per cent.

144. All goods, wares, or merchandise not elsewhere charged with duty, and not enumerated in the free list, and not prohibited to be imported into the union, shall be charged with a duty of 10 per cent ad valorem.

(NOTE.—Vide Articles III (*a*) and XX of convention.)

ARTICLE III.—PREFERENTIAL ARTICLE.

A rebate of customs duties shall be granted on any goods and articles the growth, produce, or manufacture of the United Kingdom imported therefrom into the union for consumption therein to the extent following:

(a) *In the case of goods and articles liable to customs duty under Class I, II, or V, a rebate of 25 per cent of any duty chargeable thereon at an ad valorem rate but of no other duty, and*

(b) *In the case of goods and articles liable under Class III to duty at an ad valorem rate of 2½ per cent a rebate of the whole of such duty.*

Provided, That the manufactured goods and articles in respect of which such rebate as aforesaid shall be granted shall be bona fide the manufactures of the United Kingdom, and that in the event of any question arising as to whether any goods or articles are entitled to any such rebate as aforesaid, the decision of the minister or other executive officer in whom the control of the customs department immediately concerned is vested shall be final.

ARTICLE IV.

A rebate similar to that for which provision is made in the last preceding article shall be granted in like manner, and under like provisions, to goods and articles the growth, produce, or manufacture of any British colony, protectorate, or possession granting equivalent reciprocal privileges to the colonies and territories belonging to the union, provided that no such rebate shall be granted in the case of any particular colony, protectorate, or possession until on and after a date to be mutually agreed upon and publicly notified by the parties to this convention.

TRADE OF THE UNITED STATES WITH SOUTH AFRICA.

Imports from British Africa.

Article.	1892.	1894.	1896.	1898.	1900.	1902.
Coffee ... free ... pounds	1,059	75,182	22,108	...	79,248	...
Fibers (vegetable) and textile grasses, unmanufactured ... free ... tons	...	...	...	...	652	...
Fish (lobsters, canned or uncanned), free ... pounds	...	...	...	62,932	143,815	16,350
Hides and skins, other than fur skins:						
Free ... pounds	...	...	967,603	754,462	651,369	772,821
Dutiable ... do	...	...	...	1,729,952	110,334	134,628
Spices, not elsewhere specified:						
Free ... do	344,101	349,676	5,302	...	...	157,871
Dutiable ... do	28	...	...	...	14,400	90,600
Sugar, not above No. 16 Dutch standard in color:						
Free ... pounds	8,031,573	8,595,345	...	...	...	...
Dutiable ... do	...	...	26,564,115	12,081,142	36,502,673	...
Wool, unmanufactured:						
Free ... do	...	...	8,252,441	...	...	...
Dutiable ... do	1,143,112	1,221,742	...	1,371,359	432,721	98,468
	Dollars.	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*
Articles, the growth, etc., of the United States, returned ... free	40	25	3,010	2,404	3,247	34,545
Chemicals, drugs, and dyes:						
Free	18,039	6,354	23,634	5,155	8,252	20,623
Dutiable	...	...	12,204	30,874	10,501	2,253
Coffee ... free	137	14,411	2,785	...	10,000	...
Feathers and downs, natural, dressed, colored, or manufactured, and dressed and finished birds, etc.:						
Free	...	...	93,140	7,487	...	...
Dutiable	93,934	29,420	...	108,583	73,064	177,295
Fibers (vegetable) and textile grasses, unmanufactured ... free	...	...	...	...	12,120	...
Fish:						
Lobsters, canned or uncanned, free	...	...	...	6,229	10,993	2,557
All other ... free	...	...	4,230	...	...	...
Hides and skins, other than fur skins.						
Free	201,455	51,450	115,936	100,647	114,027	132,680
Dutiable	...	...	...	218,553	13,321	20,003
Oils, vegetable ... free	60,033	50,232	98,741	80,536	113,644	211,614
Spices, not elsewhere specified:						
Free	16,766	17,584	181	...	...	12,795
Dutiable	13	...	...	...	1,252	7,191
Sugar, not above No. 16 Dutch standard in color:						
Free	228,481	134,514	...	...	...	...
Dutiable	...	...	461,054	131,469	576,585	...
Wool, unmanufactured:						
Free	...	...	909,480	...	...	...
Dutiable	145,460	148,613	...	164,635	90,475	11,067
All other free and dutiable articles	52,239	11,484	7,752	18,766	1,701	346,768
Total free of duty	545,141	284,974	1,256,305	217,740	273,243	747,566
Total dutiable	271,456	179,113	475,842	657,598	765,939	231,795
Total imports of merchandise	816,597	464,087	1,732,147	875,338	1,039,182	979,361

Exports of domestic products and manufactures to British Africa.

Article.	1892.	1894.	1896.	1898.	1900.	1902.
Animals:						
Horses .... number	....	....	1	117	8,199	60,469
Mules .... do	....	....	80	1,268	31,014	23,282
Sheep .... do	....	....	138	93	....	84
Breadstuffs:						
Corn .... bushels	712	1,000	2,331,069	233,274	705,860	49,131
Corn meal .... barrels	....	295	5,013	77,941	194,212	33,188
Oats .... bushels	403	880	321,845	82,461	936,039	3,099,563
Wheat .... do	18,675	83,559	2,296,394	2,823,863	1,407,994	1,442,649
Wheat flour .... barrels	7,538	12,638	195,163	259,305	255,034	445,606
Candles .... pounds	324	994	303,897	317,300	135,565	216,120
Cotton, manufactures of (cloths), yards	246,094	1,044,429	2,041,891	605,470	928,471	6,105,420
Fish (salmon, canned) .... pounds	39,193	19,142	150,948	350,178	632,012	2,581,088
Hay .... tons	....	....	146	238	11,156	37,532
Iron and steel, manufactures of (wire), pounds	932,493	2,296,000	7,075,800	6,253,866	7,811,024	23,924,675
Naval stores (turpentine, spirits of), gallons	35,904	29,610	63,757	54,612	49,129	91,632
Oils:						
Animal (lard) .... gallons	153,751	165,143	271,458	88,478	86,492	131,667
Mineral, refined .... do	3,655,598	2,993,104	5,313,014	6,569,598	6,367,184	9,766,549
Paraffin and paraffin wax .... pounds	67,213	507,154	484,830	712,191	1,382,540	2,057,657
Provisions, comprising meat and dairy products:						
Beef, canned .... pounds	1,280,656	867,193	3,019,493	4,122,457	11,241,395	9,152,068
Lard .... do	247,549	289,024	446,663	1,700,293	2,477,904	3,281,760
Spirits, distilled (rum) ... proof gallons	721,669	795,134	735,512	567,256	635,764	960,157
Sugar, refined .... pounds	471,645	411,308	421,408	253,734	209,510	152,918
Tobacco, leaf .... do	1,017,995	1,216,053	938,839	1,504,393	2,630,760	4,308,379
Wood (boards, deals, and planks), 1,000 feet	8,685	11,386	22,469	11,631	14,880	30,807
Agricultural implements:	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*
Mowers and reapers and parts of	61,058	79,743	190,542	90,018	69,332	37,728
Plows and cultivators and parts of	83,255	125,695	181,894	74,281	111,767	185,590
All other and parts of	81,266	53,846	55,163	36,247	34,407	59,506
Animals:						
Horses	....	....	500	17,585	797,372	6,106,810
Mules	....	....	12,202	178,508	2,962,550	2,272,101
Sheep	....	....	7,550	9,090	....	12,000
Books, maps, engravings, etchings, and other printed matter	10,815	15,323	39,909	38,446	25,385	109,559
Breadstuffs:						
Corn	496	544	1,039,325	96,717	336,591	34,849
Corn meal	....	829	10,919	148,259	388,876	93,558
Oats	197	427	99,412	25,188	323,913	1,430,157
Wheat	22,009	64,057	1,673,060	2,641,524	990,475	1,062,389
Wheat flour	42,039	50,791	665,530	1,157,540	880,136	1,585,826
All other	33,674	24,872	106,175	232,526	270,068	466,741
Candles	33	112	24,237	23,777	11,300	17,286
Cars, carriages, other vehicles, and parts of	73,686	78,558	282,242	534,891	160,417	360,271
Chemicals, drugs, dyes, and medicines	72,177	75,799	160,756	198,692	204,049	386,971
Cotton, manufactures of:						
Cloths	22,143	71,463	133,167	49,243	80,724	328,108
All other	7,459	7,843	35,978	45,111	43,456	93,683
Fibers (vegetable) and textile grasses, manufactures of	11,602	8,311	19,929	35,318	32,739	69,556
Fish.						
Salmon, canned	5,238	2,126	13,768	25,651	57,387	219,233
All other fish	18,539	21,729	36,280	40,325	41,717	95,792

Exports of domestic products and manufactures to British Africa—Continued.

Article.	1892.	1894.	1896.	1898.	1900.	1902.
	Dollars.	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*
Fruit and nuts	10,314	8,721	34,893	75,318	136,162	314,987
Gunpowder and other explosives	13,984	27,546	36,777	34,402	7,240	13,442
Hay	....	....	2,437	3,705	192,485	705,143
Instruments and apparatus for scientific purposes, including telegraph, telephone, and other electric	901	3,359	94,541	90,333	93,447	155,946
Iron and steel and manufactures of:						
Wire	31,196	56,755	146,887	117,215	177,498	558,571
Builders' hardware, saws, and tools	111,696	143,318	254,417	185,203	168,109	337,242
Machinery	178,385	286,316	1,054,805	1,111,657	786,658	1,298,250
All other	51,530	86,757	410,390	460,283	817,402	1,002,853
Leather and manufactures of	37,437	43,449	124,731	158,821	208,332	414,898
Musical instruments	18,379	20,529	38,035	39,956	28,805	41,804
Naval stores (turpentine, spirits of)	17,939	13,574	26,696	21,930	29,459	49,133
Oils:						
Animal (lard)	93,790	117,368	156,310	41,616	45,829	105,215
Mineral, refined or manufactured	408,544	308,100	640,788	697,591	769,853	1,134,494
Paints, pigments, and colors	533	1,313	12,515	15,856	21,089	38,324
Paraffin and paraffin wax	5,431	24,227	23,043	29,336	79,315	113,408
Provisions, comprising meat and dairy products:						
Beef, canned	113,975	72,017	231,991	330,161	982,142	922,244
Lard	22,330	29,025	37,033	122,827	179,193	329,673
All other	22,234	28,755	42,257	152,400	487,904	1,003,710
Spirits, distilled (rum)	163,798	944,569	998,436	792,188	855,140	1,316,110
Sugar, refined	22,210	21,461	21,248	13,123	11,693	6,179
Tobacco and manufactures of:						
Unmanufactured (leaf)	88,675	114,223	82,296	143,022	241,501	409,375
Manufactures of—						
Cigarettes	112,647	115,675	130,805	169,886	505,234	289,850
All other	38,569	25,834	64,223	37,525	71,572	601,588
Wood and manufactures of:						
Lumber—						
Boards, deals, and planks	214,785	215,336	468,863	306,397	311,420	632,513
All other	72,467	62,490	100,608	68,419	115,856	181,063
Manufactures of—						
Doors, sash, and blinds	51,801	66,793	102,721	117,699	111,236	174,806
Furniture, n. e. s.	67,721	89,004	210,967	309,541	249,080	364,361
All other	115,154	183,653	498,985	175,645	95,781	158,304
All other articles	121,591	180,747	452,673	492,045	654,098	1,058,678
Total domestic exports	3,453,700	3,972,982	11,288,909	12,013,037	16,256,194	28,759,878
Total foreign exports	11,065	10,901	2,086	14,105	13,288	20,227
Total exports of merchandise	3,464,765	3,983,883	11,290,995	12,027,142	16,269,482	28,780,105

BUILDING MATERIALS FOR SOUTH AFRICA.

From an article published in the African Review of July 18, 1903, on the demand for building materials of all kinds, the following is taken:

At the present time the demand for building material of all kinds is very active, not only in Cape Colony but in all South Africa. The city of Johannesburg is just embarking upon an expenditure of about $2,500,000 for drainage purposes, of which it is expected that $500,000 will be spent in pipes. There is no reason why white tiles for either flooring or roofing should not be used in the more expensive houses and clubs and hotels under construction in the large towns. The sale no doubt would be confined to Cape Town, Port Elizabeth, East London, Durban, Johannesburg, Bloemfontein, and Pretoria. As soon as the great scheme of municipal sanitation is carried out in Johannesburg, the present system of earth closets will be replaced by water-closets, and there will be a large demand for lavatory and bathroom appliances and fittings of all kinds. Doors and window frames are imported from America in immense quantities at all the Cape Colony ports. Grates and chimney pieces sell well. What is wanted is a showy effect at a moderate price f. o. b.

Speaking generally, the present time is very favorable for any attempt to get into the trade in building materials in South Africa, as the demand is large and the stocks are not yet replenished. Details as to prices can only be obtained on the spot.

INDUSTRIAL EDUCATION IN EUROPE.

(*From United States Commercial Agent Harris, Eibenstock, Germany.*)

ITALY.

Technical education in Italy during the past few years has made rapid and praiseworthy progress. As long ago as 1880 the Government appointed a commission to thoroughly study this question in all its details. The report of the commission was to the effect that Italy's future as a manufacturing country depended upon the intelligence and skill of her working classes, and that nothing could more effectively further the interests of the country in a national sense, or raise the general condition of the people, than a broad and liberal support of industrial education on the part of the State. There is perhaps no country in the world which has more extended house industries than Italy. The silk industry, the manufacture of hemp and tow, the twisting of baskets and braiding of straw hats, for example, furnish employment to many thousands of people in their own homes. These industries, like similar ones in Germany and Bohemia, have taken deep root among the peasant classes of Italy. The Government, in preparing its scheme of industrial education, had to consider the interests of the house industries to a very marked degree.

There is no question but what a well-developed house industry, especially in such a country as Italy, has many praiseworthy features, and from a politico-economical standpoint is a question of vast importance. Unlike Germany, Italy has succeeded in preventing a wholesale emigration from the rural districts to the large cities. The surplus population has gone to the United States, Brazil, and Argentina. The products of the Italian soil during the past twenty years have not only been increased, but the large emigration to foreign countries has, on the whole, produced but little effect. It is therefore evident that the Italian Government has a deep interest in fostering house industries side by side with the agricultural interests of the country in localities where it is practicable, and any

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plan of industrial education which is intended for the good of the manufacturers at large must reach that class which labor a part of the time in their own homes, as well as that class which labors all the time in the factories of the large cities.

Having the combined industrial and agricultural interests of the country in view, the Italian Government during the past twenty years has gradually established a system of industrial schools which to-day extends all over the country, and one is to be found in every village which can boast of having an industry of any kind. They receive subventions from the State and are under the control and supervision of the Minister for Agriculture and Commerce.

The majority of these schools are divided into four departments, the branches of industry taught depending, of course, upon the particular industry which has taken root in that locality. The departments in the school at Biella, for example, are as follows:

1. Public and private architecture.
2. Mechanics and mechanical industries.
3. Weavers and mechanical weaving.
4. Wood carvers and art industries.

To the first class belong those who have a good knowledge of all elementary branches taught in the public schools. In the other three classes only those are admitted who have previously acquired some practical knowledge of mechanical weaving, wood carving, etc.

There are also advanced industrial schools in Italy which give special training to students who expect to associate themselves with the glass, iron, marble, and other industries of the country. The subjects taught in this class of schools are as follows:

Italian.
History.
Natural history.
Agriculture.
French.
Geography.
Physics.
Shipping.
Arithmetic.
Drawing.
Chemistry.

The course lasts four years, and there are practical workshops connected with many of the schools. A certificate or diploma from one of these schools admits an applicant without further examination to the technical and classical universities of Italy.

HOLLAND.

The industrial school, or Ambachtschool, in Holland educates skillful and practical workmen for the different trades, such as cabinetmakers, blacksmiths, locksmiths, carpenters, etc. Instruction is divided into three departments, as follows:

1. Elementary instruction.
2. Theoretical instruction for carpenters and architects.
3. Practical instruction for cabinetmakers, locksmiths, etc.

One of the best schools of this class is the Ambachtschool in Rotterdam. In the elementary department instruction is given in reading, writing, arithmetic, history of the Netherlands, and geography. The theoretical and practical departments are attended by students belonging to the following trades:

Carpenters.
Painters.
Coppersmiths.
Brush makers.
Cabinetmakers.
Blacksmiths.
Locksmiths.
Masons.
Metal workers.
Coopers.
Furniture makers.
Stonecutters.
Sculptors.
Printers.

The workshops connected with the school are better equipped, perhaps, than any other of this class in Europe. In the practical workroom the pupils are placed in classes which are cognate with each other; as, for example, under the head of carpenters are classed all those whose trade has to do with woodwork, such as wagon makers, coopers, cabinetmakers, etc. The workshops have been developed to such an extent that in the metal-working branch, for instance, engines driven by steam and electricity have been set up wherever practicable. The school authorities are permitted by the State to purchase, for the use of students in the workshops, the necessary wood, iron, steel, nails, stone, copper, metals, colors, coal, glass, etc. The products manufactured by the students are then sold wherever practicable for building purposes, etc. A great many tools for the hand trades are manufactured every year.

Similar Ambachtschools are located in Arnheim, The Hague, Groningen, Utrecht, and other cities of Holland.

RUSSIA.

Much has been done for technical education in Russia. At different periods throughout the nineteenth century, technical schools with advanced curriculums were founded in Moscow, St. Petersburg, Helsingförs, Riga, and other cities of the Empire. Industrial schools, however, for apprentices—such as exist in Saxony, for example—are but little developed in Russia. The same is true of technical education on such an elevated plane as that taught in the German universities of Charlottenburg, Darmstadt, Dresden, etc. The want of such training in Russia is becoming more apparent every day, and especially so at a time when the State is exerting every effort to extend the railways in different parts of the Empire, when electric railways are being planned and built in many cities and when mines are being exploited at a rapid rate. Russian students compose a very large percentage of the foreigners matriculated in the German technical universities.

Instruction, however, in the class of schools above mentioned is thorough, and in no country, with the exception of Holland and Germany, is the system of practical demonstration better developed than in Russia. The schools, for the most part, wherever practicable at least, are connected with large factories, where the student receives wages for the work actually performed, the same as a common laborer. During the hours devoted to such practical instruction the student assists in manufacturing motors, pumps, boilers, tools, etc. In many factories it is the custom to permit the student to temporarily act as foreman or manager of some particular department or branch of manufacture after he has passed through the prescribed course of theoretical and practical training.

There are two classes of students in the technical school at Moscow. The first class consists of those who have graduated from a gymnasium, or high school, and the second class consists of those who have completed the courses taught in the ordinary public school. A great many belong to the latter class who have only a scant knowledge of reading, writing, and arithmetic. The students of the second class must attend a sort of preparatory school for three years in connection with practical work in factories before they are permitted to enter the first class of the technical institute, which is chiefly devoted to theoretical instruction. The pupils of the first class, however, are permitted to attend at will the practical instruction given to the members of the second class.

The tendency in Russia at present is to establish middle-classed industrial schools with workrooms where apprentices may learn such trades as that of blacksmith, locksmith, cooper, carpenter, cabinet-maker, etc. It will then be possible, for those who so desire, to enter the first class of the technical institute. The need of primary industrial schools in Russia is apparent when we take into consideration the fact that fully 8,000,000 people are partially engaged during the year in the widely diversified house industries of the country, which in extent and importance are second only to those of Italy.

SWEDEN AND NORWAY.

House industries have also taken deep root in Sweden and Norway. The topography of the country, the climate, and the conditions surrounding agriculture in general have produced a state of affairs favorable to such industries. The people who live in the sparsely settled mountain districts, where railroads have not yet penetrated, spend the long winter evenings in making homespun cloths and in dressing hides and skins.

Industrial education in Sweden and Norway is chiefly connected with the public school system of the two countries, and there is scarcely a town, large or small, which is not supplied in this respect. In many of the country districts evening classes have been arranged for the purpose of giving instruction to young men and women in sewing, spinning, and weaving. In a number of cities elementary technical schools have been founded which prepare students to enter the royal technical institutes in Stockholm and Gothenburg. The elementary school in Boras is intended especially for weavers and has a workshop fitted up for practical instruction. The evening preparatory school in Eskilstuna trains young men to work with iron and steel, while those in Filipstad and Falun are preparatory schools of mining. The course of instruction given, on the whole, in these schools covers the following subjects:

Arithmetic.
Architecture.
Painting.
English.
Bookkeeping.
Geometry.
Engraving.
Drawing.
French.
Modeling.
Machine construction.
Materials of commerce.
Lithography.
German.

DENMARK.

In 1868 a Danish officer named Clauson-Kass made a thorough study of the conditions surrounding the house industries in the country districts of Denmark. He found that the people were not only industrious, but that the skill with which they had adapted themselves to producing all the necessities of everyday life was something marvelous. His investigations led him to the conclusion that every effort should be made not only to preserve the house industries, but that a system of education should be introduced whereby the youth of the country might receive training in the hand trades. In order to put his theories into practice, he resigned his commission in the army and founded a small school in the little town of Nestved. All his energies were directed toward classifying the different kinds of hand trades and house industries, with a view to founding schools all over the country wherever the same might be systematically taught and fostered. His efforts attracted the attention of the Government, and State aid on a small scale was soon forthcoming.

The industrial schools in Denmark to-day pay especial attention to basket weaving, brush making, bookbinding, wood carving, straw weaving, and cabinetmaking.

SWITZERLAND.

Advanced technical education in Switzerland may be secured in the polytechnicum of Zurich. The instruction is theoretical, combined with excursions to the factories in the city and neighborhood. The middle sphere of technical education is represented by industrial schools which are divided into three departments, as follows:

1. The technology of mechanics (mechanisch-technische).
2. The technology of chemistry (chemisch-technische).
3. Commercial (kaufmännische).

Workshops in connection with the industrial schools, when compared with those in Saxony, for example, are but little developed. There is a tendency, however, on the part of these schools to adapt themselves more and more to local conditions. The weaving schools, for example, in Winterthur and St. Gall enjoy an excellent reputation. The first industrial school for weavers in Switzerland was established in Wattwys, Canton of St. Gall, in 1881.

The hours devoted to practical and theoretical instruction in the industrial weaving schools of Switzerland usually number ten each day. During the forenoon, from 7 o'clock until 12 o'clock, the pupil is taught how to sort, prepare, thread, mount, and weave. During the afternoon, from 2 until 7 o'clock, the theory of weaving is taught in all its details. For practical instruction many of the schools are supplied with hand weaving machines, while a number of the most important ones have mechanical machinery. The courses of instruction are divided into two parts, namely, theoretical and practical, each course lasting six months. During this time the pupils manufacture large quantities of handkerchiefs, napkins, and ordinary cloth. During the latter part of the course they are thoroughly instructed in the art of weaving damask, ordinary piqué, and double piqué. The pupils in every case are so grounded in the technicalities of weaving that they step from the school to the factory, and from the spindles of the factory there is nothing to prevent those gifted with exceptional skill from rising to the positions of foremen and managers.

The industrial schools of Switzerland have left their stamp upon the industries of the country and have materially assisted in placing Swiss manufacturers in a position to compete with the laces, ribbons, cottons, silks, watches, and clocks of other European countries.* There are industrial schools for clock and watch making in Geneva, Locle, Chaux-de-Fonds, etc.; there are art and industrial working schools in Zurich and other cities for women; and there are industrial schools for the hand trades in most of the cities and towns of the country. The subjects taught in these schools are drawing, arithmetic, geography, bookkeeping, German, French, and practical instruction in the trade chosen by the pupil.

AUSTRIA.

The exposition of 1873 in Vienna exercised a great influence upon technical education in Austria. To-day there are industrial and trade schools in every part of the country, as well as numerous special schools for weaving, wood carving, basket making, and for practical instruction in making firearms, machinery, glass, watches, clocks, etc.

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* The total exports declared from the various consular districts in Switzerland to the United States during the fiscal year ended June 30, 1902, amounted to $18,126,431.56.

There are at present in Austria between 400 and 500 industrial schools of all classes and grades. Advanced technical education may be had in the polytechnicums of Vienna, Graz, Prague, Brünn, and Lemberg.

Technical education in Austria may be divided into six classes, as follows:

1. The technical university or polytechnicum.
2. State industrial trade schools.
3. Industrial art schools.
4. Specialized industrial schools, with workshops.
5. Primary industrial school classes, where instruction is given evenings and on Sunday.
6. Technical trade museums, in connection with which instruction is given in a general way.

The average industrial school is supported by the State, but the local authorities and private individuals in most cases furnish the school rooms with light and heat. The schools are under the immediate control of a school committee, the members of which reside in the community. This committee, however, acts in harmony with the wishes of the Minister of Commerce, who reserves to himself the right of confirming the appointment of the various directors and of directing the educational policies of the schools in general.

FRANCE.

Technical education has been the subject of much attention in France since 1878. In addition to the technical universities and technical schools for roads, bridges, mines, and civil engineers there are industrial art and trade schools for textiles, tobacco, powder, clocks, gloves, porcelain, and every other article of manufacture in France which has claims to any importance.

There are many industrial schools in France which are worthy of special attention. This is true of the one in Cluses, Savoy, which was established in 1863 for the clock and watch industry. It admits pupils between the ages of 14 and 20, but every candidate must have a good elementary education. The aim of the school is to train up practical workmen for the watch and clock industry of that district. There is also an advanced course for those who wish to become manufacturers in this branch.

The industrial textile schools in France are numerous, but they have not all attained the same degree of efficiency. These schools may be divided into two classes, namely, those which serve the interests of the textile industry in general and those which serve only the interests of some specific textile branch in some particular locality. When Alsace belonged to France the industrial textile school in Mülhausen was considered a model of its kind. When Alsace was ceded to Germany in 1871 the French Government established in Epinal and Rouen two industrial textile schools, which to-day are superior to the one in Mülhausen. These two schools may be considered as belonging to that division of French industrial schools which serve the interests of the textile industry in general. The course of study at Rouen lasts three years, and the curriculum is as follows:

First year.—Mathematics, physics, chemistry, English, and practical work in laboratories.

Second year.—Weaving, spinning, raw materials, German, and drawing.

Third year.—Applied mechanics, dyeing, art of making samples, Italian, and machine construction.

Similar schools have been founded by the Government in Lille, Roubaix, and Lyons. The city of Roubaix gave the lot, library, and furniture, while the State erected the building. Both city and State support the school with annual subventions.

In all the industrial schools of France great stress is laid upon practical instruction in workshops. These workshops or laboratories, as the case may be, are the counterparts of machine shops and factories, so that the pupil on leaving the school may enter the ranks of the industrial army of France trained and ready for active work in the various branches of industry.

ERNEST L. HARRIS,
Commercial Agent.

EIBENSTOCK, GERMANY, *August 13, 1903.*

INFLUENCE OF TECHNICAL EDUCATION.

(*From United States Deputy Consul-General Hanauer, Frankfort, Germany.*)

The great influence of technical education in developing industries, increasing export trade, and augmenting a country's wealth is shown by a report which the British consul at Stuttgart lately sent to his Government concerning the technical high schools of Germany. There are nine such created and conducted by the Government; two more are now being established. Besides these State institutions, many others under private management, but subject to governmental supervision, exist in Germany, which turn out able engineers and scientifically educated craftsmen.

The British consul points out that Germany, in consequence of its thorough and widespread system of technical education, has surpassed, within the last fifty years, all other nations, and now holds first place in chemical manufactures. He estimates the value of the chemical products annually made in Germany at 1,000,000,000 marks, or $238,000,000. A very large part of these (especially dyes made of coal tar) are exported to the chief manufacturing nations—the United States, England, Belgium, France, etc., as also to China, Japan, India, etc. There is scarcely a country in the world which does not use German chemicals of some sort.

The transformation of Germany from a poor agricultural country to one of the first and richest manufacturing and exporting nations is, to a considerable part, due to German superior technical training.

Some of the German chemical works have branch establishments in foreign countries. The German capital invested in these earns big profits and adds to the national wealth of the country.

SIMON W. HANAUER,
Deputy Consul-General.

FRANKFORT, GERMANY, *August 10, 1903.*

SCHOOLS FOR AGRICULTURE IN QUEBEC.

(*From United States Commercial Agent Johnson, Stanbridge, Quebec.*)

Under date of April 25, 1903, there was incorporated under the laws of this Province a royal school for the purpose of establishing and carrying on an agricultural school, experimental farms, and all works in connection therewith and subjects kindred thereto. This school is to maintain two or more schools and experimental farms in the Province of Quebec, one to be located in the district of Montreal and one in the district of Quebec. Each of the two said schools is to contain accommodations for at least 50 pupils, who will be given a full course of three years' tuition, together with board, free of charge.

The school may provide educational facilities for other pupils for full or partial courses and may charge fees for such tuition.

The course of tuition is to include all branches of agriculture, horticulture, and arborculture, dairying in all its branches, slaughtering and curing of meats, and carpentering, blacksmithing, and such other trades as may be useful to agriculturists.

The school will establish experimental farms and farms for tuition purposes and will clear and improve land and dispose of the same to graduates of the schools and others, and will make advances to settlers to enable them to take up lands. The school can, for the purposes above mentioned, lease, buy, sell, exchange, and deal in lands and all products of the lands, and may manufacture any and all of said products and dispose of the same.

FELIX S. S. JOHNSON,
Commercial Agent.

STANBRIDGE, QUEBEC, *August 18, 1903.*

IMPORTANT STEP IN ELECTRIC TRACTION.

(*From United States Consul-General Mason, Berlin, Germany.*)

A practical experiment of the highest importance and interest in the development of electrical railway service is now in progress on a suburban line between Niederschönweide and Spindlersfelde, in the southeastern quarter of Berlin.

During the past week there has been in daily operation a car driven by a new motor, invented by a young Austrian electrician and built from his plans by the Union Electric Company, of Berlin. This motor achieves with apparently entire success what has not been accomplished hitherto—at least not in Europe—viz, it propels the full-sized service car at any desirable degree of speed without employing any cumbrous and expensive regulating devices, while deriving its energy from a single-phase alternating current of 6,000 volts, carried along the line on one small trolley wire and delivered directly to the motor without conversion to a lower voltage or a continuous current. •

The far-reaching importance of this demonstration—which will be at once recognized by every electrical engineer—will be apparent when it is remembered that electric traction, which has proven so effective and economical for interurban and suburban service, has met hitherto some very serious economic difficulties when applied to long distances. The method heretofore employed has been to send over the line alternating currents of high pressure which are taken off at intervals by substations equipped with step-down converters that reduce it to a continuous current of low voltage, which is fed into the trolley wire or third rail and thus transmitted to the motors of passing trains. As already noted, this works very well for short lines such as are required in city and suburban transit and which are thronged with constant traffic. But when the proposition is to extend the same practice to a standard railway, connecting two cities from 100 to 300 miles apart, the cost of the installation and working expenses become practically prohibitive. Besides the frequent substations equipped with transformers capable of converting the high-voltage alternating current into a low-pressure continuous one, there is the question of heavy copper conductors throughout the line, and this, added to the fact that the transformers and rotary converters must stand idle except when the converted current is taken off and used by some passing train, has hitherto rendered the proposition economically untenable.

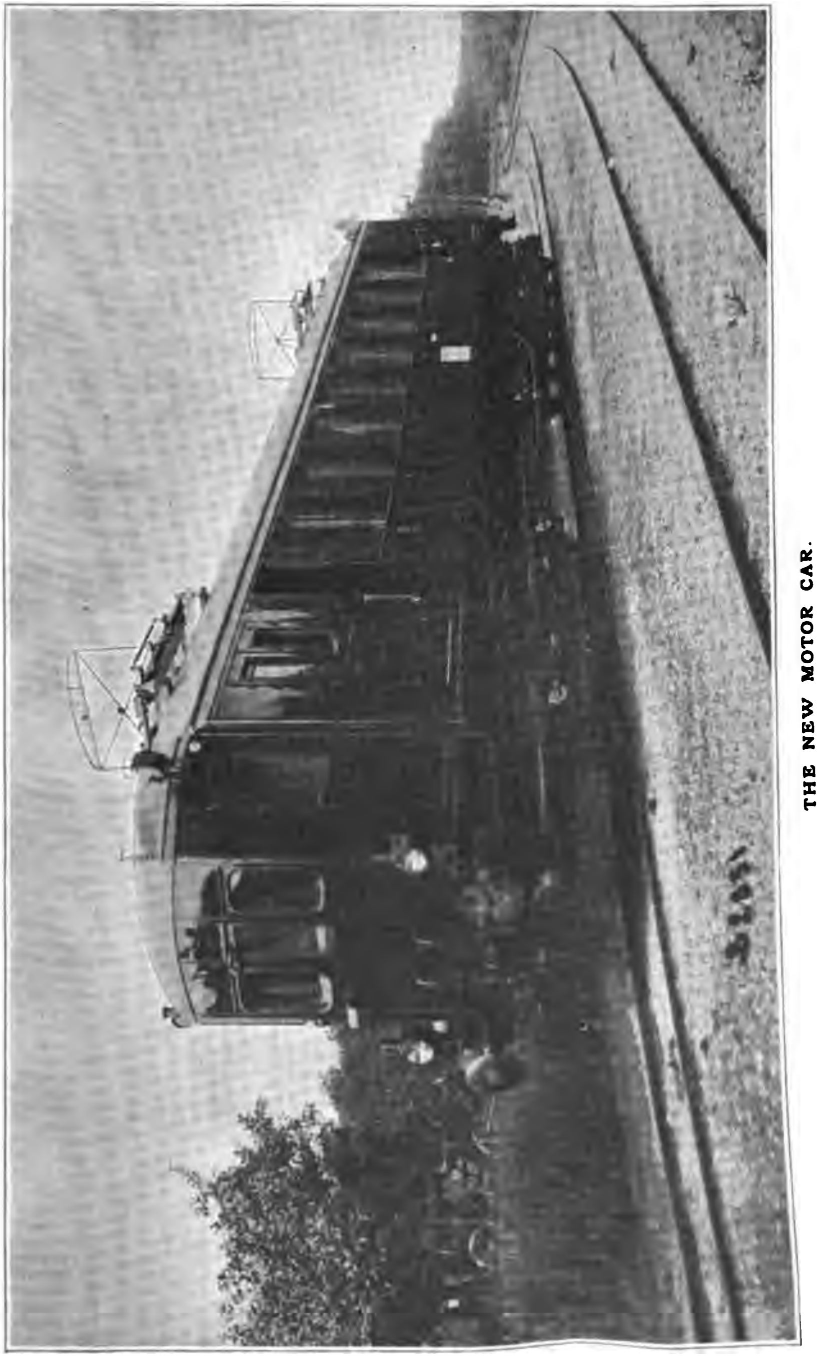
When the high-speed experiments were tried last year on the

Government railway line between Marienfelde and Zossen, an alternating three-phase current of 10,000 to 12,000 volts was carried along the line on three copper wires and conducted thence by trolleys to transformers carried under the floor of the car, whence it was transformed to 1,150 to 1,800 volts and passed into the three-phase induction motors. The car, as will be remembered, easily attained a speed of 140 to 150 kilometers an hour, at which pace the rails began to give way. The further experiments had to be postponed until a more solid and substantial track could be provided.

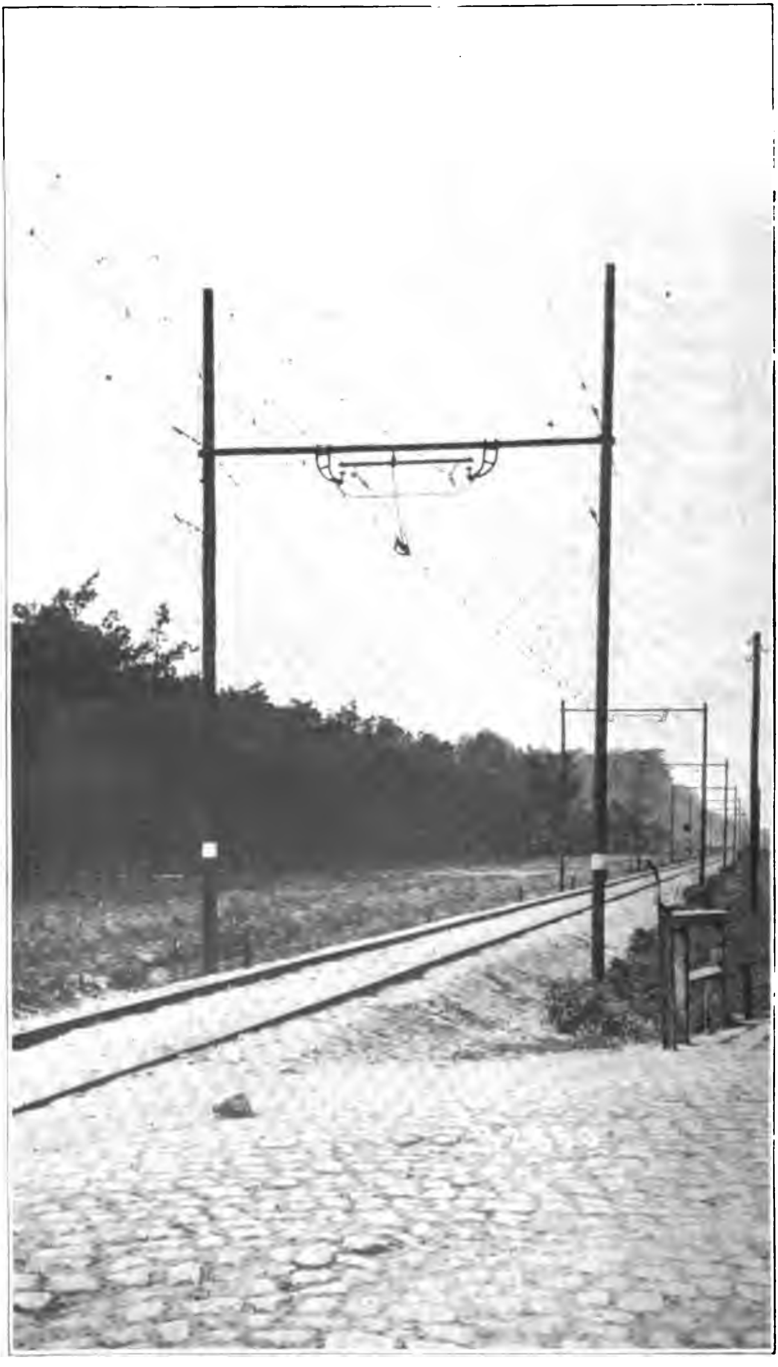
The present experiment has therefore a wholly different purpose. It involves no question of extreme high speed, but rather the transmission of a single-phase alternating current at a voltage (6,000 volts in this case) sufficient to carry it over a long line on a small and relatively inexpensive wire, and the direct use of the current, without transformation, by a motor capable of running economically at any desirable speed and which fulfills all the other requirements of electric traction. The point demonstrated by the tests now in progress is the effectiveness of the new motor for the special purpose to which it is applied. No sparking or other technical difficulty appears thus far to shadow the success of the experiments. The system eliminates the expensive substations, with their heavy initial outlay and operating expenses, and is so simple and direct in its working that it may, at least in theory, be applied to lines several hundred miles in length. If the distances are very great, of course the power may be transmitted from a distant waterfall or steam plant at any desired pressure—say, 20,000 or 50,000 volts—and then reduced in ordinary transformers, requiring no especial care, to the working-line voltage of, say, 6,000 or more. The present tests are over a line of 3 or 4 miles in extent, the length being immaterial. There may be encountered new technical difficulties when this distance is increased to as many hundred miles, but these difficulties are only such as may be met in any long-distance transmission and such as electrical science at its present stage is fully prepared to overcome. The new motor is believed to have bridged the chasm and opened the way to economical, and therefore practical, long-distance electric traction on railways of standard capacity.

FRANK H. MASON,
Consul-General.

BERLIN, GERMANY, *August 27, 1903.*



THE NEW MOTOR CAR.



THE PREPARED LINE, SHOWING AERIAL CONDUCTOR AND SUPPORTS.

ELECTRIC LIGHTS ON RAILWAY TRAINS IN GERMANY AND AUSTRIA.

(*From United States Commercial Agent Harris, Eibenstock, Germany.*)

The various attempts during the past few years to introduce electricity as a means of light on railway trains, and the many experiments connected therewith, have proved that only a very limited number of the different systems now in use may be termed a technical and economic success. A railway train running at a high rate of speed presents many difficulties which are easily overcome in the application of electricity from stationary plants. These obstacles accumulate when we take into consideration that an even volume of light must be provided for the same train, not only when it is in motion, but when it is stopping at stations as well.

To the casual observer it would seem that any arrangement which will admit of all the lamps of a whole train being lighted up from some one central dynamo must in the nature of things be the most practical method which might well be adopted. Theoretically, this could only be possible when based upon the assumption that a railway train would always be made up with the same number of cars, and that the central accumulators had been tested and finely gauged to a train the length of which is invariably the same. The best solution of the problem has been found in the method which enables each carriage of a railway train to be lighted separately and independently of the others. For example, in the Dick system, explained below, each car is supplied with a small dynamo which is attached to the axle of the car wheels. This dynamo drives the necessary current for creating light into the lamps while the train is in motion. Simultaneously, a small battery is charged with electricity from the same dynamo. This battery then serves the purpose of keeping up the current while the train is stopping at stations. Generally speaking, however, the lamps should be fed as long as possible directly from the dynamo in order that the battery may be spared. During stops and when the train is going at a slow rate of speed up steep grades, the lamps are always fed from the battery. The accumulators are charged while the train is in motion, and this is the case by day as well as by night.

The different systems of electric railway lights now either in use or being experimented with in Europe are known by the following names:

Auvert.
Kull.
Stone.
Böhm.
Moskowitz.
Dick.
Jaquin.
Vicarino.

The Dick system has been adopted by the Oesterreiche Schuckert-Werke, in Vienna, Austria, and this company has fitted up a large number of railway carriages with this apparatus.

The machinery and apparatus of the Dick system are divided into four parts, namely, dynamo, storage battery, apparatus safe, and circuit wires, installations, etc.

Dynamo.—Figs. 1 and 2 show the dynamo from two different sides, while figs. 3 and 4 show how it is attached to the axles of the car wheels, whereby the current is generated by means of friction. The average number of volts produced by the velocity of from 700 to 2,400 revolutions is 45 amperes. The weight of the dynamo is 440 pounds.

Battery.—Two batteries (fig. 5) of medium size will supply 22 lamps, each having a lighting capacity of 8 candles, during a period of five hours without being recharged from the dynamo. The batteries are protected by safes (fig. 6), which may be placed in any convenient part of a railway carriage. Exact instructions are posted on the door of each safe for the benefit of the porter or others whose duty it is to look after the apparatus.

ERNEST L. HARRIS,
Commercial Agent.

EIBENSTOCK, GERMANY, *August 4, 1903.*

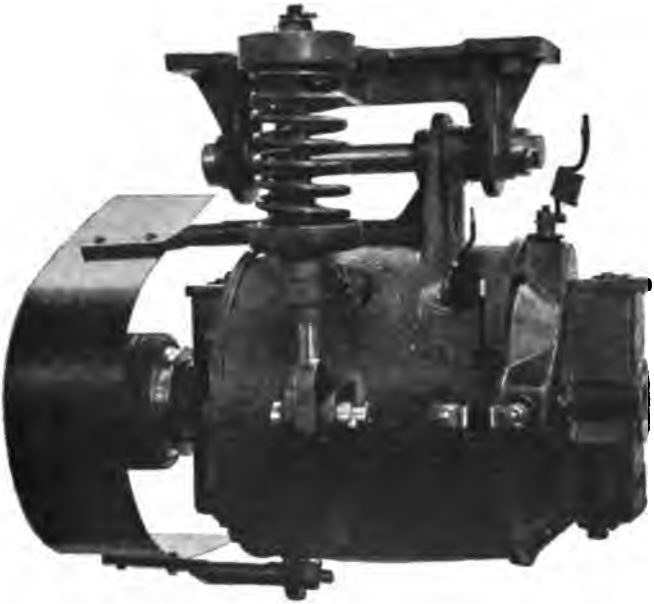


FIG. 1.—DYNAMO.

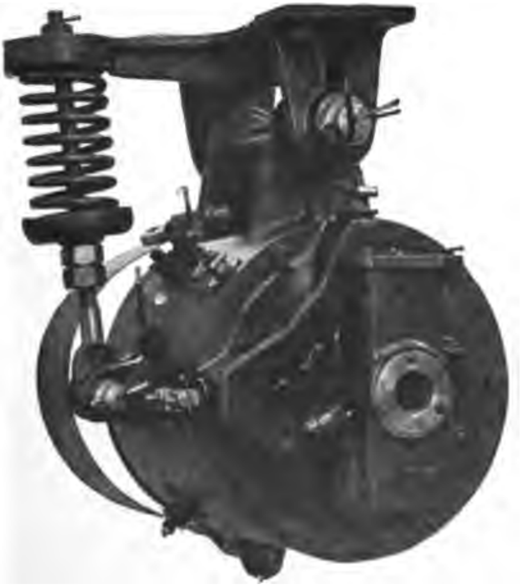


FIG. 2.—DYNAMO.

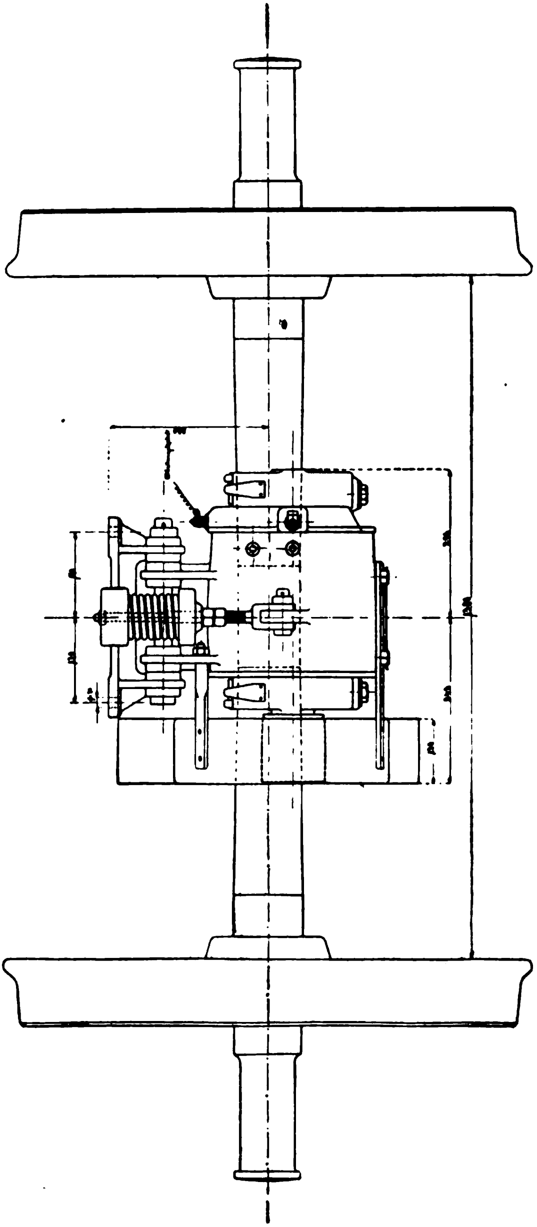


FIG. 3.—DYNAMO FASTENED TO CAR-WHEEL AXLE.

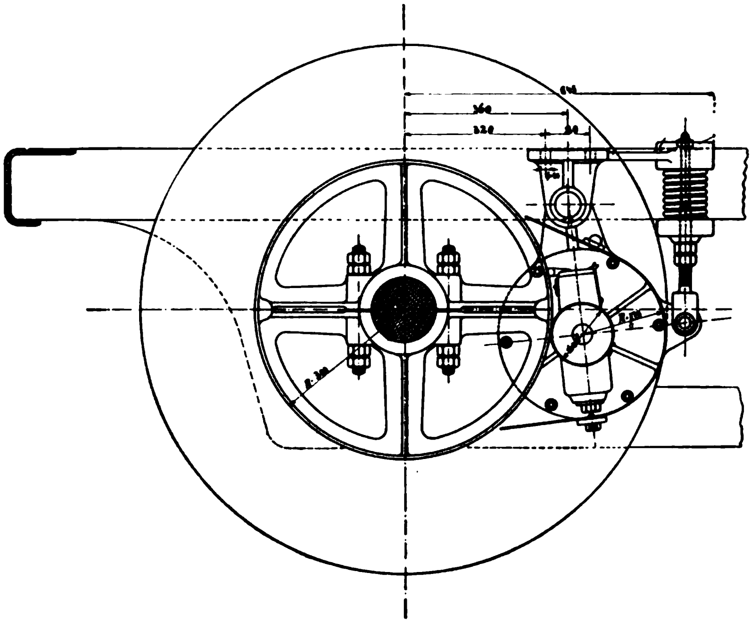


FIG. 4.—DYNAMO FASTENED TO CAR-WHEEL AXLE.

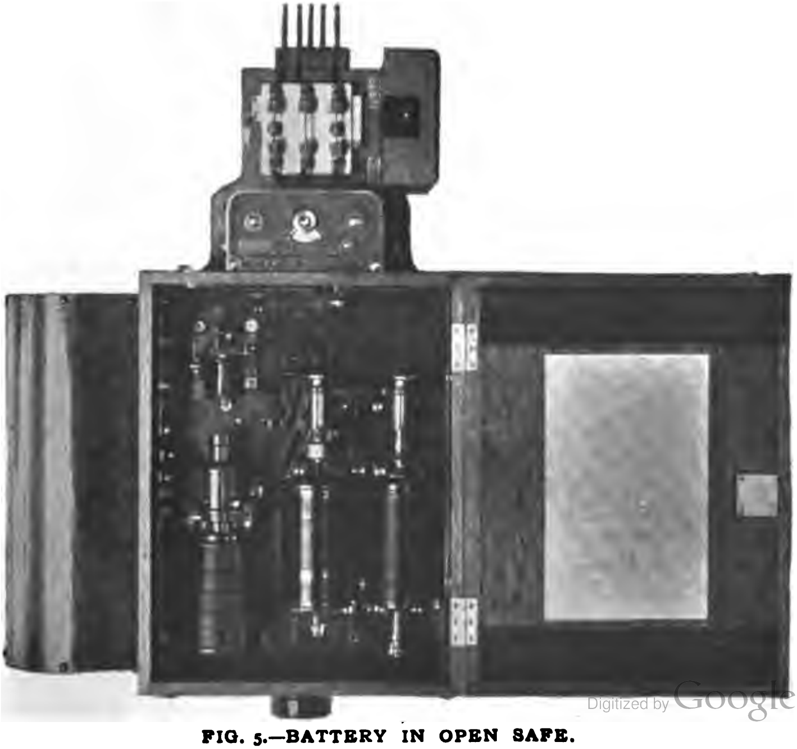


FIG. 5.—BATTERY IN OPEN SAFE.

FIG. 6.—BATTERY SAFE CLOSED, WITH INSTRUCTION LIST.

ELECTRIC CAR LINES IN GERMANY.

(*From United States Consul Harris, Mannheim, Germany.*)

Recently published figures place the total number of miles of electric car lines in Germany at 2,117. Considering the area and population of the Empire, these figures show a comparatively slow development of this branch of railway building—this, too, in spite of the fact that in electric lighting and in other applications of electricity Germany has taken advanced rank. The cause of this backwardness is to be sought mainly in the fact of State ownership of the larger part of the existing steam railways and the unwillingness on the part of city and other authorities to grant charters to private companies. Local and suburban travel is heavy but is as yet carried mainly by steam railway lines, often of cheap construction.

The Grand Duchy of Baden, a small part of the Empire, has an area slightly larger than that of the State of Connecticut, with a population somewhat more than twice as great. In 1900 it had five cities of upward of 40,000 population, namely, Mannheim, Carlsruhe, Freiburg, Pforzheim, and Heidelberg. There were in 1900 fourteen cities of upward of 10,000 population. The State includes a thickly settled portion of the Rhine Valley about 160 miles long, with an average width of 10 miles, which would seem to be a specially good field for electric railway lines. And yet at present electric lines are in operation only in or near the following cities:

		Length of line.
Mannheim (including Ludwigshafen extension)	miles	25
Carlsruhe (including line to Durlach)	do	9
Heidelberg (including Heidelberg-Wiesloch line)	do	11½
Freiburg	do	8

In each case the same track is used in part by the cars of several lines. Thus the total track length of the Mannheim city and suburban lines is 14 miles.

The city of Kehl, Baden, is connected with Strassburg by a branch of the Strassburg city lines, but does not operate an independent line. Of the above lines, each belongs to the respective city except in the case of the Heidelberg city lines, which are operated by a private corporation, the city being the owner of three-fourths of the capital stock.

The fare charged varies with the distance, long rides and transfers on a single fare not being permitted to the extent they are in the United States. The fare for ordinary distances is 10 pfennigs (2½ cents), tickets good for 25 rides being sold for 2 marks (48 cents).

Of the lines now in operation in Baden only two can be said to be interurban lines—a line of about 9 miles from Heidelberg to Wiesloch and a somewhat shorter line from Carlsruhe to Durlach.

H. W. HARRIS, *Consul.*

MANNHEIM, GERMANY, *August 14, 1903.*

CONGRESS OF GERMAN ELECTRICIANS.

(*From United States Consul Harris, Mannheim, Germany.*)

Beginning with June 7, 1903, a three days' congress of the German Society of Electricians was held in Mannheim. The meetings were attended by about 300 electrical engineers from all parts of the Empire.

Papers were read on a variety of topics pertaining to electrical engineering, especially as applied to street-railway construction, electric lighting, etc. Among those who presented papers were Privy Councilor Professor Arnold, of Carlsruhe; Professor Görges, of Dresden; and Baron von Gaisberg, of Hamburg.

At this meeting, as at similar meetings in Germany, that which first attracts the attention of the observer is the active part taken by teachers from the technical and other schools in what might be regarded the purely practical side of the subject.

Thus, in this particular case the discussions led into the construction of street railways, installation of light and power plants, etc. Among those who took a leading part in these discussions were teachers and professional men.

No opinion is ventured as to whether, upon the whole, a science such as that of electricity, mining, architecture, etc., progresses more rapidly if left mainly to what may be termed the self-made unprofessional engineer or if left more under professional or academic control. The German manufacturer or railway builder would doubtless answer the question in favor of the professionally trained expert.

The conditions existing in the two countries being in many respects different, the advancement made in electrical engineering, for example, afford no complete answer to the question.

It would be conceded on both sides of the ocean that in the more difficult field of chemical manufacture the professionally trained chemist has been indispensable.

H. W. HARRIS, *Consul.*

MANNHEIM, GERMANY, *August 4, 1903.*

CALCAREOUS BRICK AND STONE MANUFACTURE IN GERMANY.

(From United States Consul-General Mason, Berlin, Germany.)

During the past year frequent inquiries have been received at this consulate from correspondents in the United States desiring detailed and precise information concerning the manufacture and use in Germany, for building purposes, of calcareous brick and stone made by artificially combining under pressure sand with slacked or unslacked lime. The range of these inquiries has been principally as to the length of time that such building materials have been made and used in this country, whether they have stood the test of varying temperature in wet or specially exposed situations and under heavy crushing strain, what the Government architects and leading builders think of them, and especially what patented machinery and methods for making such materials are most highly esteemed and approved in this country. The latter class of interrogatories has been stimulated by the fact that certain patented machines and processes of German origin for making sand-lime brick have been recently exploited in the United States, one of which at least has been advertised there as having been "adopted by the German Government." With a view of answering as far as practicable these inquiries, the following report is respectfully submitted.

FIRST EXPERIMENTS IN MANUFACTURE.

The first experiments in making bricks from sand and lime appear to have been undertaken at Potsdam about thirty years ago. They were suggested by the fact that Potsdam, like many other places in central Germany, is surrounded by a wide, sandy plain, which furnishes neither clay for bricks nor stone for building purposes. These calcareous bricks were first hardened by exposure to the air, a tedious process which required several months, although the bricks hardened in that way seem to have stood all tests and continue to harden with increasing age.

About 1880 the discovery was made that the freshly pressed bricks of sand and lime could be hardened in a few hours by heat and pressure of steam, and from that date the manufacture developed into an industry which reached its maturity in Germany tour or five years ago. Plants on a large scale were first constructed in this country, and the industry has gradually extended throughout the Continent and to Great Britain.

ESSENTIAL CONDITIONS OF THE PROCESS.

The indispensable materials are good, clean, sharp sand—as free as possible from impurities and containing not less than 70 per cent of silicic acid—and fresh quicklime, such as would be suitable for making mortar of good quality. All the different methods or "systems" thus far invented for combining these two materials may be grouped in two categories, viz, those in which the lime is slacked separately and then mixed with sand and, secondly, those in which the dry sand and quicklime are thoroughly mixed and then slacked. The latter method is generally practiced, for reasons that will be hereinafter stated. Throughout the whole process, whichever method of slacking is used, the point of prime importance is uniformity, without which there can be no excellence in the product nor profit in the manufacture. The best results require the following conditions to be fulfilled:

1. Uniformity in the grain and purity of the sand employed. If part of the sand is fine and part coarse, or if there is a mixture of dirt or any impurity in it, the quality of the brick or stone produced will be affected in proportion to the degree of such defect in the crude material.

2. Uniformity in chemical composition and the consequent chemical action of the lime on the sand. By this is meant that the lime used must be fresh and quick throughout and not partially slacked on the exterior of the mass by exposure to moisture or weather.

3. Uniformity in the proportion of lime to sand throughout the mixture. It will not do to have one part of the mixed material rich in lime while another is poor; the two substances (sand and lime) must be so thoroughly mingled that the mixture is of homogeneous composition throughout.

4. The slacking process, whether done before or after the lime is mingled with the sand, must be thoroughly and uniformly accomplished, so that the whole of the lime shall be converted into hydrate of calcium and no dry, unslacked pellicles left in the mortar when it goes to the press.

5. Uniformity in the proportion of water in the mortar, so that each part of the mixture shall be equally wet and fluid. For this purpose very thorough mixing and stirring, with machinery specially devised for the purpose, is necessary to secure complete combination between the elements and a smooth, uniform consistency in the plastic state.

Only when all these fundamental conditions are observed will the sand brick or stone be uniform and satisfactory in its durability, in its resistance to moisture, frost, and pressure, and in its consequent value as building material.

PROCESS OF MANUFACTURE.

As to materials, the lime, which should first be pulverized in a ball or other mill, should be so pure that when slacked it will contain not less than 92 per cent of oxide of calcium. Any admixture of clay or magnesia is detrimental, and if such admixture exceeds even a small percentage the lime is thereby rendered unfit for the calcareous-sandstone process. Fresh, dry quicklime is slacked by absorbing 32 parts of water to 100 of lime. The union of the elements is at first mechanical, but it develops heat and under this higher temperature a chemical combination occurs, producing hydrate of lime or hydroxide of calcium, which is considerably larger in bulk than the unslacked lime from which it was produced. For the reason that the heat engendered by the slacking process promotes the chemical union between the lime and sand and further increases its plasticity, whereby it works smoothly and easily in the press, the best practice favors the mixing of the dry sand and lime before the slacking process takes place. So important is the element of heat in this connection that some mixing machines are provided with steam jackets in which exhaust steam from the engine is used to maintain a uniformly high temperture.

From the mixing machine the mortar passes to the machine press, of which there are several types manufactured by German makers of established reputation, viz: Amandus Kahl, of Hamburg; Messrs. Brück, Kretschel & Co., of Osnabrück; Messrs. Röhrig &

Koenig, of Magdeburg-Ludenberg; Friedrich Krupp Grusonwerk, of Magdeburg-Buckau; F. Komnick, at Elbing; and several others. Whatever the type, the press must be constructed to receive the mortar in molds which are automatically filled and the material pushed home by plungers which, as the machine revolves, exert an enormous pressure—as high as 350,000 pounds to each brick—which renders it dense, firm, and smooth. In this condition they are discharged from the press, loaded upon small platform cars, and run into the hardening boiler.

The hardening boiler is a long cylinder of boiler iron, 8 or 9 feet in diameter, with a rail track laid along the bottom to receive the cars, and a lid or door which swings on hinges and covers the entire end of the cylinder. When the boiler is filled with cars on which the freshly molded bricks are piled in loose, open formation, this door, or man-head, is closed, secured with bolts, and steam turned in. In the beginning of the industry, offsteam with a low degree of pressure was used, but experience showed that, other things being equal, the hardness of the bricks is increased with the degree of steam pressure applied, so that the best practice now favors a pressure of 9 atmospheres (132 pounds per square inch) for small factories and 10 atmospheres (147 pounds) for large plants where every step of the process is on an extensive scale. The duration of a "turn"—that is, the filling of a boiler, the hardening, cooling, and discharge of the finished contents—occupies from ten to fifteen hours, and the bricks, as soon as they are cool, are ready for use.

They can be made of any size or form, but are usually of the ordinary type, 9 inches long by 4½ inches broad and 2¾ inches thick, and as in the best presses the enormous strain is applied vertically—that is, upon the top and bottom of the brick—it is prepared to sustain a heavy crushing strain when laid in a wall.

PRESENT STATUS AS BUILDING MATERIAL.

Inevitably the record of sand-lime brick as constructive material is brief and recent. There are probably not 100 of them in any wall in this country more than thirty years old. Their durability for long periods, upon which their real value as building material mainly depends, has been theorectically demonstrated by various and thorough scientific tests, based on what had been previously known concerning the permanence of sand when chemically and mechanically combined with lime. It has been stated in this report that the earliest calcareous-sand bricks were slowly hardened by exposure to the air, and that they have continued to grow firmer and more flinty with increasing age. Elaborate tests have been since made with both air-dried and steam-hardened bricks and building stones by the

Swiss Government and by the imperial testing station at Charlottenburg, which is standard for Germany. The sum of all testimony thus obtained is that, when prepared properly, made of pure, good materials, artificial sand-lime bricks and stones are permanent and fulfill all the requirements of high-class building materials. The following synopsis of a report by Prof. Dr. Klien, of Königsberg, on some sand-lime bricks made by Messrs. A. Czymmek & Co., of that city, will serve as an example of many similar and equally authentic experiments:

The bricks were of ordinary building size and a chemical analysis showed that they contained an average of 4 per cent of lime, had a sharp-grained texture, and were uniformly hardened throughout. The lime was firmly bound with the silicic acid, and the bricks did not dissolve in dilute mineral acids. After immersion for ten days in water they were dried in an airy room, quickly gave up the greater part of the absorbed water, and at the end of a week had resumed their original weight. The air contained in the structure of the bricks was sufficient to resist satisfactorily the transmission of heat, and they withstood favorably exposure to intense heat and cold. They also surpassed the prescribed standard for such material in regard to crushing strain and resistance to fire, with subsequent sudden cooling in water. In conclusion, the report of Professor Klien says:

> From observations made in a building erected several years ago with sand-lime bricks, it was found that the rooms were perfectly dry and the brickwork had become harder, especially where exposed to moisture, which proves that, owing to a chemical action which takes place through the influence of moisture, the bricks increase in hardness with age.

Among the various experiments made with sand-lime brick at the imperial testing station in Charlottenburg and described in the official reports of that institution, there is selected for the present purpose a series which was concluded and the result announced on the 16th of May, 1898, as follows: Twenty samples of sand-lime bricks, 10 inches long, 5 inches wide, and 2¼ inches thick, were tested in the following manner: Ten bricks were first thoroughly saturated by soaking one hundred and fifty hours in water, hard frozen, then thawed and submitted to crushing strain, with the result that they sustained in that condition an average pressure of 31,602 kilograms, or 219 kilograms per square centimeter (1,226 pounds per square inch). The other ten samples were tested in a dry condition and withstood an average pressure of 34,313 kilograms (75,488 pounds avoirdupois), or 238 kilograms per square centimeter (1,333 pounds per square inch).

Other tests at the same institution showed that such bricks will resist fire and all conditions of weather and temperature, and that they absorb water but sparingly. They cost now in Berlin from $4.04 to $4.25 per thousand, and are approved and used by competent architects and builders.

FALSE CLAIMS IN THE UNITED STATES.

The statements variously published in the United States that calcareous sandstones and bricks, made by this or that patented process, have been "adopted by the German Government" is untrue. The chief Government architect at Berlin, on being shown an American advertisement embodying that statement, gave it prompt and emphatic denial. What is true is that sand-lime bricks, made by various manufacturers at different localities in Germany, have been used in the construction of certain public buildings, a list of which, published by the Association of Calcareous Brickmakers at the close of 1901, specifies 29, including the railway station at Driesen, a military storehouse at Kastel, freight station at Crefeld, large military barracks at Neuhammer, municipal buildings at Strassburg, a police court at Halle, etc. Wherever they have been thus used the fact thereby proven is that the sand-lime bricks have satisfied the Government tests as to quality, and have been obtainable at prices not exceeding the cost of ordinary clay bricks.

THE QUESTION OF PATENTS.

From the foregoing statement of the essential conditions of sand-lime-brick manufacture, it has been seen that they are simple, fundamental, and unpatentable. No one can claim an exclusive method of mixing sand, lime, and water and pressing the mixture into cubes or other forms. Attempts, more or less successful, have been made to patent "systems of manufacture," but the patents, when granted, have covered only some detail of treatment of the materials or of construction in the machinery. A careful examination of the records at the Imperial German Patent Office, made recently by Mr. Arthur P. Hall, shows that there remain in force three principal patents in this category, taken out, respectively, by Kleber, Olscheysky, and Neefgen, as follows:

The Kleber patent covers the use of a dilute solution of hydrochloric acid in the mortar, which, it was claimed, facilitated the hardening and improved the product. There is no evidence to show that this method is in industrial use or has any practical value.

Herr Olschewsky has secured two patents on the form and construction of the cars or trucks on which the freshly pressed bricks are wheeled into the cylindrical boiler for steam hardening. The essential device in both cases is that the bed of the car is made in the form of a tank, which is filled with quicklime then loaded with bricks, and, being subjected to low steam pressure in the cylinder, the condensing water in one case slacks the lime, developing heat which aids in the hardening process. The second process is identical, except that, instead of condensing steam, water is injected to slack the lime.

The Neefgen patents cover a method of hardening sand-lime bricks by subjection for five days to a moist atmosphere heated to 100° C. and subsequent exposure to the open air.

These are all mere details and involve alleged improvements which may be advantageous under certain conditions, but are not essential. The evidence is cumulative and convincing to show that sand-lime bricks and building stone can be and are made successfully in Germany without recourse to any patented process. Messrs. Röhrig & Koenig, the eminent machine builders at Magdeburg, state in a recent letter:

> It can therefore be asserted that to-day not one of all the lime-sand-stone factories works according to any system whatever, although in the first years of the industry large sums were spent for licenses. It was found in each case that it was impossible in practice to work according to the specifications of the patents, and such sweeping changes had to be made that nothing useful remained of the patented processes.

Messrs. Brück, Kretschel & Co., of Osnabrück, also builders of machinery for this and other purposes, declare in their catalogue:

> It is now proved beyond all doubt that in the production of calcareous-sand bricks it is unnecessary to have recourse to patented methods. * * * Patents have been granted for entirely unimportant improvements in the methods of production, and which, instead of proving valuable, gave rise to much trouble and complicated the process.
>
> Furthermore, this important industry has been injured by the way in which some of the methods of manufacture have been puffed up, since the promoters of a particular process did not hesitate to publish low costs of production which could not at all times be verified, but soon proved entirely false when actual working operations were begun.

Mr. Amandus Kahl, of Hamburg, who has also been cited as a prominent and experienced builder of machinery, says:

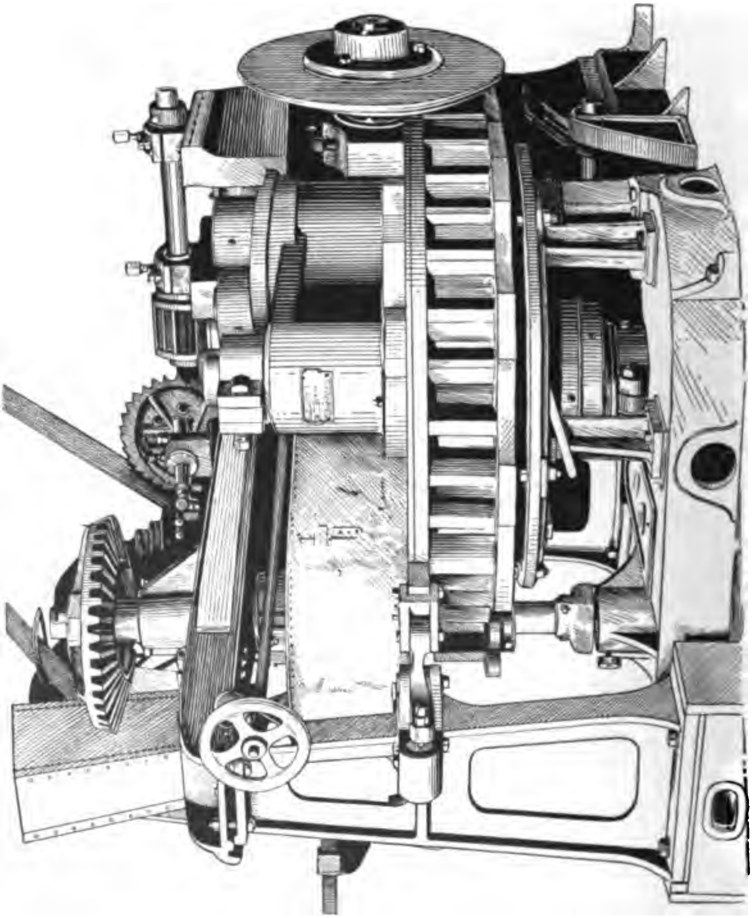
> Without the use of any patent, lime-sand stone can be made equally well. The points of principal importance in this manufacture are not patented and can not be. Few of the patents are of any value.

All this does not, however, alter the fact that some of the highly improved machines which are made and used in Germany to-day for the various operations in manufacturing sand-lime bricks and stone do include special improved parts and features which are covered by patents granted in this and other countries. But in such cases the patent is owned by the maker of the machine, and the use and advantage of it, whatever they may be, are sold to each purchaser of such machine. It is not, however, necessary, or apparently advisable, to purchase any patented method or system to enable a manufacturer to make calcareous-sand stone and brick of the best quality.

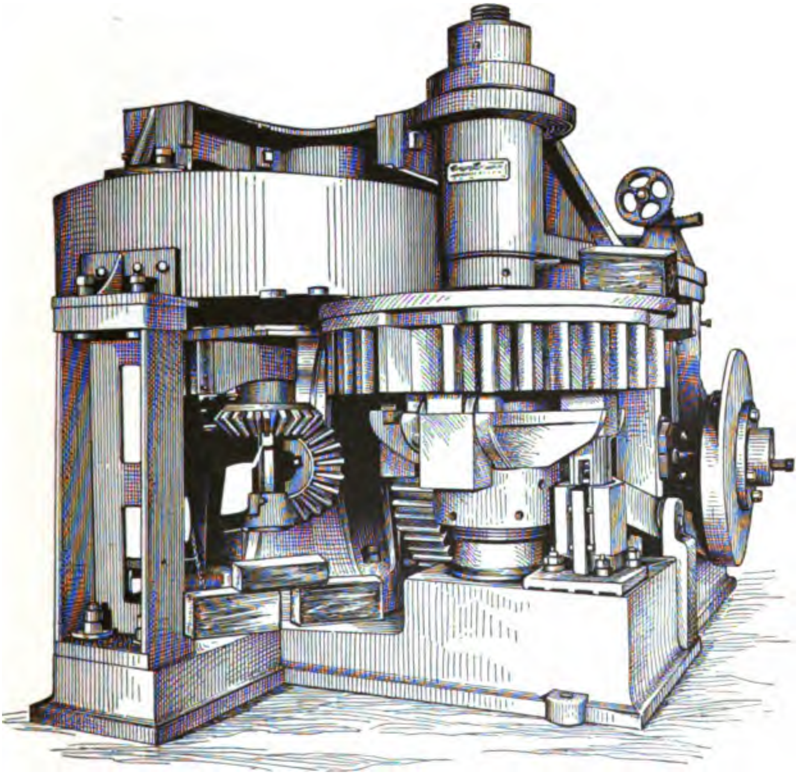
The conditions of success are pure, sharp sand and fresh, clean lime in large quantities, at the lowest practicable cost, cheap fuel, and easy, cheap transportation for the finished product to a ready market. These conditions are best met where a manufacturer can build his plant in close proximity to the sand bed and make his own lime from conveniently derived limestone.

FRANK H. MASON,
Consul-General.

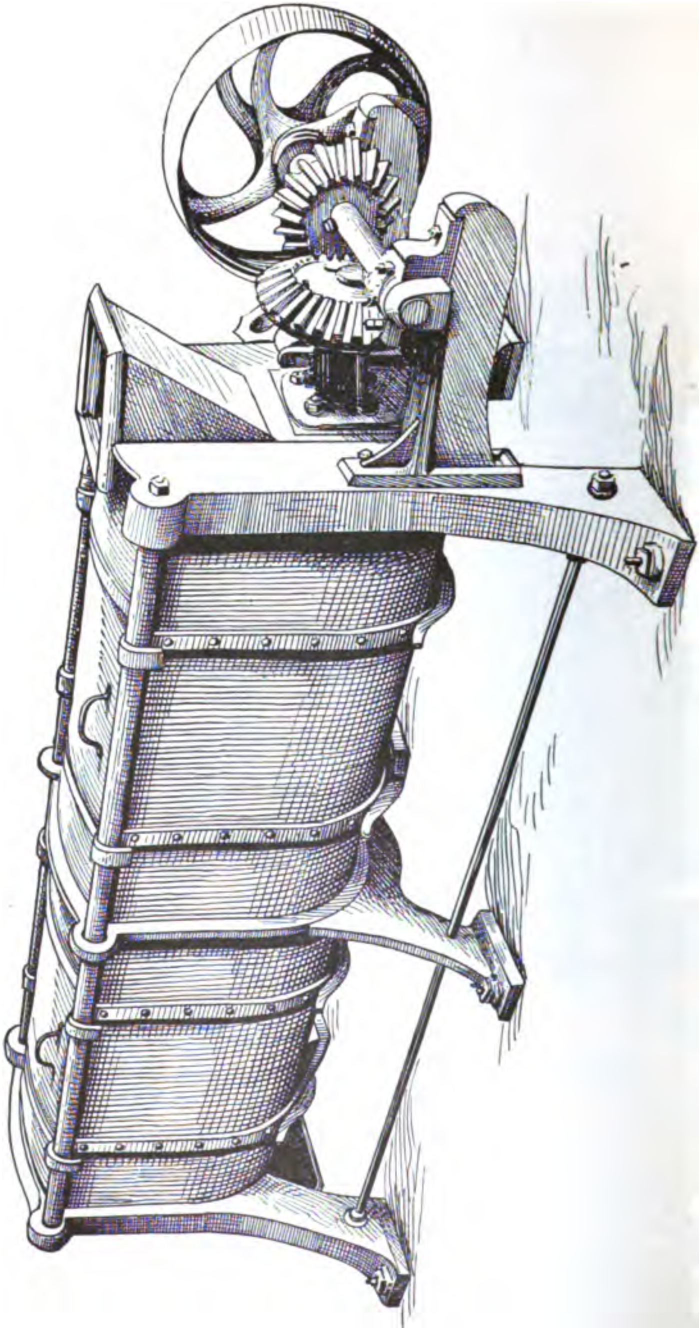
BERLIN, GERMANY, *August 7, 1903.*



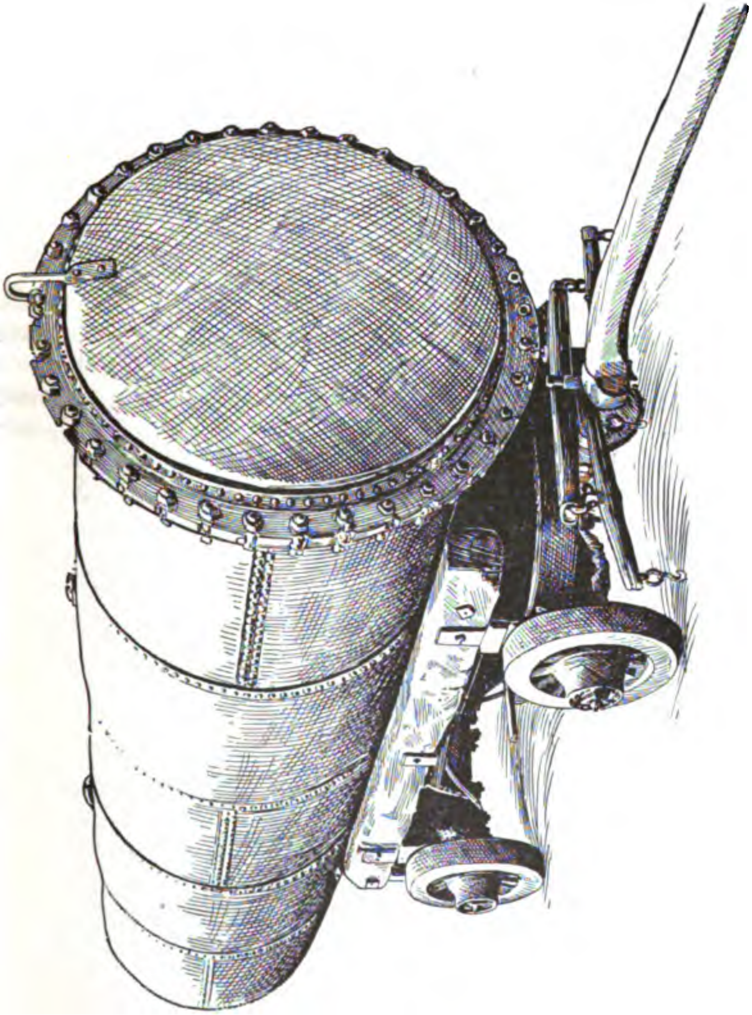
MACHINE PRESS FOR MAKING SAND-LIME BRICK.



ANOTHER VIEW OF MACHINE PRESS.



CONTINUOUS-SERVICE MIXER FOR MIXING SAND AND LIME.



STEAM HARDENING CYLINDER.

CONDITION OF CROPS IN GERMANY.

(*From United States Consul Warner, Leipzig, Germany.*)

The condition of the crops of the German Empire at the middle of June, 1903, compared with May, 1903, expressed in figures, 1 signifying very good, 2 good, 3 medium, and 4 poor, were as follows:

Crop.	June, 1903.	May, 1903.
Wheat:		
Winter	2.7	2.8
Summer	2.6	2.5
Winter spelt	2.1	2.3
Rye:		
Winter	2.5	2.5
Summer	2.5	2.5
Summer barley	2.5	2.5
Oats	2.7	2.5
Potatoes	2.6	2.7
Clover	2.8	2.5
Lucern	3	2.7
Meadow grass	2.6	2.5

In general, it may be said that the winter-wheat crops did not suffer very much on account of the drought. Winter rye has already been harvested. The summer-grain crops, which suffered because of the lack of rain and by reason of the large number of harvest flies, are later than usual. Their stalks are smaller than in former years, and there are more weeds. It is hoped that the recent rains will somewhat make amends for the damage done in the early season.

The dry weather retarded the growth of the potatoes, but since the rain they have come on very nicely. The early potatoes are smaller than usual. The first cut of clover was medium; the second promises to be no better. The first cut of meadow grass was satisfactory; the second looks as if it would be very poor.

BRAINARD H. WARNER, Jr.,
LEIPZIG, GERMANY, *July 30, 1903.* *Consul.*

GRAIN MOVEMENT IN GERMANY.

(*From United States Consul Diederich, Bremen, Germany.*)

To American dealers in grain the following figures, showing Germany's importations and exportations of the various kinds of grain during the first six months of this current year, may prove interesting. It will be noted that comparatively little—only about one-tenth—was exported.

The imports, in metric tons of 2,204 pounds avoirdupois, were:

Description.	1903.	1902.	1901.
	Met. tons.	*Met. tons.*	*Met. tons.*
Wheat	826,773	938,984	800,658
Rye	429,809	378,532	373,170
Oats	237,949	114,420	205,896
Barley	608,946	411,029	360,460
Maize	428,663	470,445	686,687
Malt	53,671	50,243	47,878
Beans	14,959	10,302	10,566
Pease	32,912	21,105	31,096
Linseed	156,178	111,968	123,280

The above quantities were imported from the following countries:

Country.	Wheat.	Rye.	Oats.	Barley.	Maize.
	Met. tons.	*Met. tons.*	*Met. tons.*	*Met. tons.*	*Met. tons.*
Russia	297,591	384,980	216,233	397,859	54,117
Roumania	52,316	11,216	14,118	32,995	27,988
United States	301,615	23,670	504	505	306,320
Argentine Republic	155,682	...	...	10	26,440
Austria-Hungary	2,865	29	1,440	160,719	4,182
Turkey	...	1,703	512	3,147	...
Netherlands	2,410	2,265	482	1,542	1,426
Bulgaria	1,881	4,790	1,509	...	660
Belgium	3,796	172	...	...	231
Servia	6,612	327	...	70	585
Canada	85	...	...	...	...
Australia	606	...	...	...	...
East Indies	354	...	...	...	...
Uruguay	730	...	...	...	...
Denmark	...	...	...	8,425	1,388
Morocco	...	...	...	1,149	...

The exports were:

Description.	1903.	1902.	1901.
	Met. tons.	*Met. tons.*	*Met. tons.*
Wheat	83,451	10,924	81,807
Rye	90,738	34,905	47,227
Oats	39,595	104,052	46,807
Barley	8,030	18,030	6,867
Malt	5,401	4,620	5,777
Maize	17	45	42
Beans	1,190	1,598	2,313
Pease	1,899	1,305	1,071
Linseed	6,867	1,696	3,335

HENRY W. DIEDERICH,
Consul.

BREMEN, GERMANY, *August 1, 1903.*

COMMERCIAL AND INDUSTRIAL DEPRESSION IN GERMANY.

(*From United States Consul-General Hughes, Coburg, Germany.*)

Germany suffered severely during the year ended June 30, 1903, for which this report is written, from a commercial crisis, and a short review of the causes leading thereto will, I hope, be of interest to those engaged or desiring to engage in business in this Empire.

CONDITIONS IN 1900.

The tide of commercial prosperity, which had been steadily rising in Germany from 1895 to 1899, began to ebb in the spring of 1900. In the money market the turning point occurred in April, as shown by the drop in the Harpener and Laura shares, criteria for the mining and smelting industries, respectively. These stood:

Shares.	Jan. 2.	April 20.	April 21.	July 2.	Oct. 1.
Harpener	204	244	242.6	185.6	177.5
Laura	255.5	281.4	279.75	217.75	191.5

It will be noticed that of the two the Laura, or smelting industry, was most affected, the percentage of decline in value being approximately double that of the Harpener shares. Symptoms of the ebb showed themselves in a slackness of the textile and building trades. As a consequence of great activity in former years, prices of sites had risen and money was dear, the Imperial Bank's rate of discount ranging between 7 and 5 per cent during the first seven months of the year; hence little building was done and failures had to be chronicled here and there, as in Dresden and Munich, where the builders had continued operations on the same scale as during the flood-tide times. In Berlin, on the contrary, a house famine occurred, and the landlords reaped a rich harvest because of the disproportion between demand and supply. This inactivity naturally influenced the iron market. Beginning with April complaints were loud of a lack of orders for girders. Consumption in the iron, in the metal, and in the machine industries also fell off, and then came the turn of the carriage, cycle, and electric branches. In June Die Metallindustrie Zeitung stated that the demand in Germany had never been so weak as at that time. For a while the iron foundries and coal mines did good business, but toward the close of the year the ebb touched them, and the Rhenish-Westphalian Coal Syndicate announced that from January 1 the output would be decreased by 10 per cent.

Dr. J. Jastrow shows how the depression mirrored itself in the labor market during 1898–1900:

Applicants for every 100 vacant places.

Year.	September.	October.	November.
1898	98.3	114.8	135.9
1899	99.9	109	130.8
1900	100.6	120.4	158.1

October and onward saw workmen discharged in large numbers, mostly in the textile districts. Crefeld, a town of some 100,000 inhabitants, had on October 15, 1900, according to official statistics, 1,300 unemployed weavers and artisans.

CONDITIONS IN 1901.

Things grew worse in 1901 and the crisis was sharpened by the disproportion between the prices of raw material and manufactured products. The raw-stuff syndicates charged as before and refused to recognize the altered conditions. Ever-increasing competition shackled the manufacturers; no new industrial concerns of any importance were founded in the spring, nor did a revival in the building trade take place. Stagnation manifested itself almost everywhere. Wages fell and diminution of output was the order of the day. In the mining branch a reduction of 20 per cent was certified; in the smelting industry, 35 per cent; in the textile industry, from 20 to 40 per cent (cotton-spinning mills); in the paper industry, 10 per cent; and in the wool industry, a minimum output. The number of the unemployed increased to such an extent that the Prussian, Bavarian, Hessian, and Baden governments separately instituted inquiries into the matter. Altogether, at the end of 1901, some 20 per cent of Germany's workmen were without employment. The number of applicants for every 100 vacancies during the first eleven months of 1901 was as follows:

January	165.8
February	146.8
March	122.2
April	141.4
May	145.9
June	148.7
July	160.9
August	150.2
September	147.5
October	198.1
November	223.9

CONDITIONS IN 1902.

At the beginning of 1902 the crisis became still further intensified by a collapse in the coal-mining industry and the consequent discharge of a great many miners. One district alone witnessed the dismissal of 10,000 men in the course of the first few months. The iron trade was kept going by forced sales abroad. The Phœnix Mining and Smelting Company printed in their annual report that they had been doing business with the United States at prices admitting of no profit. Upper Silesian and Rhenish Westphalian iron was sold at a loss. Works in Rhenish Westphalia—the smaller and more loosely constructed works—were forced to take orders at almost any prices to keep fires in their furnaces. (TheUnited States stood Germany's iron industry in good stead in 1902.) Freight rates dropped for want of cargoes. The yearly report of the Hamburg Chamber of Commerce says: "The regular lines complain of want of cargoes for their greatly increased fleets." The Association of Berlin Merchants and Manufacturers, in their report, could discern "no trustworthy signs of a change of affairs as a whole." Exceptions there were, as in some branches of the textile industry. Hermann Schüler, the Bochum banker, states that profits of most mines have gone back and that, owing to the extraordinarily low prices of lead and ores, a "large number of works were on the verge of ruin at the end of the year." The great depression in the electric industry (firms are amalgamating with a view of improving matters, and there is a general move in this direction) reacted upon the technical chemical trade, although Germany's magnificent chemical industry failed to be affected by the general commercial conditions. Contrary to strong expectations, the closing of the Boer war had little or no effect on the situation—at any rate, nothing like that which was looked for.

OLIVER J. D. HUGHES,
COBURG, GERMANY, *August 13, 1903.* *Consul-General.*

LUDWIGSHAFEN INDUSTRIAL EXPOSITION.

(*From United States Consul Harris, Mannheim, Germany.*)

As a part of its first semicentennial celebration, the Bavarian town of Ludwigshafen, on the Rhine, has given for some weeks past an interesting industrial exhibition. The town has grown in fifty years from a village of about 1,000 inhabitants to a flourishing city of 72,000. It is now the fifth city of Bavaria in population and the largest city of the palatinate. Its Rhine commerce amounted in 1901 to 1,763,000 tons.

The exposition, which is intended to be local in its character, includes especially articles manufactured in the city or for the sale of which agencies are established there. Among the noticeable features of the exposition are, first of all, the extent and variety of the exhibits. Power is supplied by the management, and looms and wood-working and other machinery are exhibited in operation. An American observer would notice, among other things—

1. The varied exhibits of Portland-cement work, paving and roofing tiles, and the excellent sewer pipe shown by the Deutsche Steinzeugwaarenfabrik für Canalisation und Chemische Industrie of Friedrichsfeld. The pipe has the characteristic threadlike grooves on the inside of the collar where the connections are made corresponding to similar grooves on the end to be inserted in the collar and suggesting the use of asphalt instead of cement at the connections.

2. The well-known types of American wood-working machinery and tools, such as spoke-turning lathes, band saws, and braces and bits. American screw-drivers, saws, taps, dies, and drills are exhibited by local dealers.

3. The heavy and clumsy character of the native shovel, trowel, pick, rake, ax, auger, and other implements as compared with the American product. The wooden handles are larger and not generally of as good wood as are those used by American tool makers. The exhibits in these and other lines show the preference given in Germany to strength and durability in tools. The light American buggy, light driving harness, easily handled American plow, harrow, cultivator, and shovel plow, the 15 or 20 cent rake, to be used for a season or two and then replaced by a new one—none of these are likely to be as popular here in the near future as they have long been in the United States.

4. The excellent display of bath tubs, closets, and modern sanitary plumbing, a branch in which Germany is making marked progress.

5. The most interesting single exhibit of the exposition is that of the Badische Anilin und Soda Fabrik. This company is engaged chiefly in the manufacture of coal-tar dyestuffs, including artificial indigo, and has largely made Ludwigshafen what it is. The company exhibits photographs, models, charts, and statistics relating to their business. Their plant itself is regarded in Germany as a model in construction and management. The concern, now in existence for more than twenty-five years, has never had a labor trouble and claims an unusually large average term of employment among its men.

The following is taken from the statistics exhibited:

Area occupied by plant, 1,850,000 square meters (457 acres); office employees, 808; workmen, 7,458 (no women are employed); dynamos, for light and power, 11; electric motors, 297; telephone stations, 225; arc lights, 1,018; incandescent lamps, 15,000.

Total consumption per year.—Raw material, 163,000 tons; coal, 516,000 tons (Krupp, at Essen, 843,494 tons); gas, 22,700,000 cubic meters (city of Mannheim, with 145,000 inhabitants, 9,924,705 cubic meters); water, 4,100,000 cubic meters (city of Mannheim used 4,044,670 cubic meters in 1902).

The company owns 102 houses for office employees and 653 for workmen; 65 baths are provided for office employees, 534 for workmen, and 24 for women and children. To these are added a large casino with libraries and reading rooms, hospitals for employees and their families, girl's cooking and housekeeping school, etc.

H. W. HARRIS, *Consul.*

MANNHEIM, GERMANY, *August 14, 1903.*

GERMAN-SOUTH AMERICAN TRADE.

(*From United States Consul-General Hughes, Coburg, Germany.*)

Argentine Republic.—According to official imperial German statistics just issued, the imports into Germany from the Argentine Republic in 1902 is given as 201,800,000 marks ($48,028,400), while Germany only exported thereto 47,200,000 marks' ($11,186,000) worth of her products. The importations from the Argentine Republic consisted of wool, hides and skins, wheat, maize, quebracho wood, linseed, bran, and sheep bladders and intestines; Germany exported thereto textiles and machinery chiefly. The imports from the Argentine Republic increased markedly as compared with the previous year, while the exports from Germany thereto showed a marked decrease.

Chile.—The imports into Germany from Chile in 1902 consisted of saltpeter, gold, sole leather, iodine, raw copper, borax, honey, and wax, and were valued at 113,000,000 marks ($26,534,000); while Germany exported thereto 32,300,000 marks' ($7,687,400) worth of products, consisting principally of textile and iron products, guns and ammunition, glassware, pottery, and fancy and toilet articles.

Paraguay.—The trade of Germany with Paraguay is very small, her exports thereto in 1902 amounting to only 915,000 marks' ($249,900) worth of goods, consisting chiefly of small machines and cotton and woolen goods. The imports from Paraguay during the same year amounted to only 452,000 marks' ($107,576) worth of tobacco, hides, etc.

Uruguay.—The exports from Germany to Uruguay in 1902 amounted to 11,800,000 marks ($2,808,400) and consisted of a large assortment of goods; the imports from Uruguay amounted to 12,900,000 marks ($3,070,200), consisting of meat extracts, hides, skins, wool, etc.

Brazil.—The exports from Germany to Brazil in 1902, consisting of iron and textile manufactures, chiefly, amounted to 43,800,000 marks ($10,424,400), and her imports from Brazil, consisting of coffee, hides, tobacco, raw rubber, cocoa, gold, precious stones, and animal and vegetable wax, amounted to 118,600,000 marks ($28,226,800). The trade of 1902, import and export, shows a marked increase over previous years.

Peru.—The exports from Germany to Peru amounted to 9,100,000 marks ($2,165,800) and consisted of cotton and woolen goods, army guns and ammunition, iron and steel machines, prepared leather, beer, etc. The imports from Peru are not given.

OLIVER J. D. HUGHES,
COBURG, GERMANY, *August 13, 1903.* *Consul-General.*

GERMAN-ASIATIC TRADE.

(*From United States Consul-General Hughes, Coburg, Germany.*)

British India.—The imports into Germany from British India, including the coast islands and Baluchistan, in 1902 amounted to 214,500,000 marks ($51,051,000), made up principally of raw materials used in the cotton and other spinning trades; also hides, skins, rice, linseed, etc. The exports to India amounted to 57,400,000 marks ($13,661,200) and consisted of textiles, chemicals, and metal goods.

Ceylon.—The imports into Germany from Ceylon amounted to 7,400,000 marks ($1,761,200), consisting of copra, graphite, oil cake, cinnamon, cocoa, coffee, and tea; the return exports to Ceylon amounted to 1,040,000 marks ($247,520), made up of assorted goods.

China.—The imports into Germany from China, consisting of gold, tea, bristles, feathers, hides, etc., amounted in 1902 to 55,100,000 marks ($13,113,800), and Germany's exports thereto, consisting of colors, ironware, textiles, beer, and sugar, amounted to 37,900,000 marks ($9,020,200).

Hongkong.—The imports into Germany from Hongkong in 1902 amounted to 4,022,000 marks ($957,236) and the exports from Germany thereto amounted to 421,000 marks' ($100,095) worth of assorted goods.

Kyao-chau.—Kyao-chau is not yet commercially a success. The imports into Germany therefrom in 1902 amounted to only 49,000 marks ($11,662) and the exports from Germany thereto—material for the Shantung Railway—amounted to 6,900,000 marks ($1,642,200).

Japan.—The imports into Germany from Japan amounted to 17,800,000 marks' ($4,236,400) worth of camphor, silk goods, raw copper, fish gut, rice, straw bands, dressed animal skins, peppermint, menthol, plant wax, etc., while Germany exported thereto sugar, wool and woolen goods, chemical and dye products, iron and ironware, cheap cotton goods, small machines, etc., to the amount of 49,800,000 marks ($11,852,400).

OLIVER J. D. HUGHES,
COBURG, GERMANY, *August 13, 1903.* *Consul-General.*

FOREIGN DOLL TRADE OF THURINGIA.

(*From United States Consul-General Hughes, Coburg, Germany.*)

The doll export from this district to foreign countries has been unsatisfactory during the last fiscal year, and were it not for the business with the United States the distress among this trade would be lamentable.

England proper has never done such a poor business in this line of goods; every doll maker or exporter who has visited his English clients this year comes back with the same story, "No orders or business of any kind." No demand seems to exist for this class of goods in any way on the English local market. The cause for this nondemand is hard to tell, but most people place it on the late Boer war.

Canada seems to have done somewhat better in the very cheap class of goods, but even this trade might be much improved. Australia and the other British colonies have not ordered anything like the same amount of goods as in previous years. The cause for this falling off is also hard to tell. All these goods are ordered through London houses.

Austria-Hungary may be said to practically have stopped buying here. This is no doubt due to two causes—first, the tight financial market and, second, the very high import duties levied by Austria-Hungary and also to the manner of interpreting the customs laws, etc., by the revenue officials.

France is too busy trying to promote her own doll trade and in endeavoring to get it on the American market to do much to help here. She keeps them out of France with a heavy duty.

Italy is now really doing no business with these parts, and the same may be said of Spain and Portugal.

With the Swiss Republic a little business is done, owing to the low duty rates, but the volume is not large.

The Netherlands and Belgium do a little business in low-grade goods.

With Sweden, Denmark, and Norway, owing to their high protective duties, very little can be done.

The Argentine Republic has done a small business for years, which seems to remain about stationary; the same may be said for Brazil.

The west coast of South America seems to order what few goods it gets from Thuringia either via London or New York.

Of Mexican business, very little is heard nowadays, but there is no doubt that American and French dolls and toys have replaced those of Thuringia in Mexico.

Cuba's trade has not picked up since the war. What the future has in store, it is hard to predict.

Central American trade has never been very large and of late it has fallen off entirely.

The trade with Asia, etc., is not done through the local houses, but mostly through London.

Russia seems to prefer her own or French dolls and toys to any other nation's products; consequently, very little is shipped from here.

During the year ended June 30, 1903, the export of dolls and toys from this district to the United States amounted to $1,840,013 out of a total export of $3,552,609, showing how important this trade with the United States is to the doll and toy makers of Thuringia.

OLIVER J. D. HUGHES,
COBURG, GERMANY, *August 13, 1903.* *Consul-General.*

REMSCHEILD TOOL-MACHINERY AND SMALL-IRON INDUSTRY.

(*From United States Consul Langer, Solingen, Germany.*)

On the whole, the business of the tool-machinery industry and small ironware has been unsatisfactory.

In view of the increased demand of the preceding years, expensive new plants were erected which, in competition with existing plants, not only forced prices down to and below cost, but caused an overproduction, particularly in the manufacture of tools, estimated at about 25 per cent of the normal production.

It is claimed that on account of the high price of coal and raw materials, as well as the products of the iron industry, the manufacturer of tools was unable to make the profit he should and at times was obliged to accept material of an inferior quality.

In the production of steel and cast steel, factories were kept running, although working hours were reduced.

In tool machinery, orders could only be obtained at low prices. The preference for locomobiles and electromotors seems to greatly affect the manufacture of steam machinery. It is mentioned that as the United States had plenty of orders for their home trade, competition from this source was not felt to the extent of former years.

The manufacture of steam boilers, saws, files, and machine knives and saws was very light, owing to foreign competition, and caused a reduction of hands employed as well as of working hours.

Trowels, chopping and mincing knives, planes, chisels, screws, locks, gas and water meters, and enameled tinware were in fair demand, although prices tended downward.

The demand for hinges was very light, owing to American and Swedish competition; the same is true of lock pins and rivets, due to the increased production of these articles in Russia and Austria, on account of tariff protection in these countries.

The reason given for a considerable decline in the manufacture of hoes, axes, hammers, hatchets, and axles for freight wagons is the decrease of export orders as well as the influence of certain unions or organizations.

Building hardware was in good demand during the spring and summer, so that additional help was employed, but an advance in the price of tin and band iron cut into the expected profits very decidedly.

JOSEPH J. LANGER, *Consul.*

SOLINGEN, GERMANY, *August 11, 1903.*

BREWING INDUSTRY OF KULMBACH.*

(*From United States Commercial Agent Harris, Eibenstock, Germany.*)

For many centuries the brewing of beer has been the chief occupation of the inhabitants of Kulmbach. Until about 1835 the production of beer in this part of Bavaria was only sufficient for local consumption. The introduction of machinery aided by steam, however, greatly increased the output, so that it soon found a ready sale, not only in Germany, but in every country in the world. The following table will show the increase in the export of this beer during the past seventy years:

	Gallons.
1831	4,385
1851	351,851
1871	1,950,631
1891	11,933,690
1899	19,020,240

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*The best literature on the beer industry of Germany is as follows. Jahrbuch für die Deutschen Aktien Brauerein, von Richard Wolf; Brauerei-Industrie Deutschlands u. des Auslandes, Bennighoven; Allgemeine Brauer und Hopfenzeitung in Nürnberg.

The capital necessary to run the different breweries in Kulmbach, with all the side lines connected with them, for one year is estimated at $2,500,000. This sum is spent chiefly in the purchase of barley, hops, malt, coal, etc. .Fully 1,000 skilled laborers are employed, while the number indirectly dependent upon the industry is much larger. The annual sum paid out to directors, clerks, and technical overseers amounts to $166,000.

The breweries of Kulmbach keep alive many side industries. The numerous steam engines of all the breweries together furnish 1,600 horsepower, while four of them have their own railway switch yards. Over 200 refrigerator cars carry the beer of the 17 breweries, not only to every part of Germany and neighboring countries, but especially to the seaports of Hamburg and Bremen for shipment to distant lands. The brewing of beer, as an industry, is of incalculable value to the agricultural interests of Bavaria, as immense quantities of grain and hops are necessary to keep the breweries running at their utmost capacity.

The internal arrangements of these great establishments are kept at the highest point of technical perfection. Their proportions will be appreciated from the following statistics covering one of the leading establishments: One seasoning tank of 6,340 gallons capacity; three huge malt vats with 3,434, 5,943, and 6,868 gallons capacity, respectively; two cooling reservoirs which will hold 4,642 and 5,679 gallons of beer, respectively; together with malt elevators, ice-making machines, fermentation tanks, and revolving cranes. The steam necessary to drive the machinery is generated in two large boilers, each having an extraordinary capacity for creating heat. In connection with these boilers there are four subterranean pits, each capable of holding 27,557 pounds of coal. The entire brewing outfit, with tanks, vats, reservoirs, etc., was furnished by a Munich firm, while the machinery and engines were manufactured by a machine factory in Augsburg. The electrical dynamos and apparatus were furnished from Berlin and by a local firm. The smokestack which rises over the brewery is 147 feet high and nearly 5 feet in diameter.

The beer brewed in Kulmbach is usually heavy in character, dark in color, and especially adapted for export. The sale of this beer in Saxony, Silesia, and North Germany has been considerably curtailed since 1901. Kulmbach beer is regarded as an article of food in Germany, especially by laborers who work in factories. When better times were prevalent throughout the country, the middle classes, as well as the working classes, preferred this genuine Bavarian beer in spite of the fact that it was more expensive. The present depressed industrial conditions generally throughout the Empire have imposed upon the people the necessity of using the greatest economy, and the mild local beers produced all over Germany are coming more and more into favor, not on account of the quality, but because the price is such that these grades of beer are always within reach of the masses. The following will show the difference in price between local and imported beer as it is sold in Eibenstock per quart: Ordinary local, 3 cents; local lager, 7 cents; local white, 10 cents; Munich, 11 cents; Kulmbach, 12 cents; Pilsen, 14 cents.

ERNEST L. HARRIS,
EIBENSTOCK, GERMANY, *July 28, 1903.* *Commercial Agent.*

RECOVERY OF GOLD IN COMBINATION WITH TELLURIUM AND SELENIUM.

(*From United States Consul-General Mason, Berlin, Germany.*)

In compliance with a personal letter dated June 29 from the chief of the Bureau of Foreign Commerce, asking for a special report in regard to the most effective process known and practiced in Germany for recovering gold from ores containing also tellurium and selenium, I have to report as follows:

Tellurium, which has been known as a primitive element for more than a century, and selenium, which is of more recent discovery, are distinguished in metallurgy as metals which combine chemically with gold.

The extraction of gold from telluride and selenic ores is therefore one of the most difficult problems in practical metallurgy. The discovery in recent times of extensive deposits of telluride-gold ores in Western Australia and the United States—notably at Cripple Creek, Colo.—has given special importance to this subject, and it has been found on investigation that, so far as can be ascertained, the most improved and effective method known in this country is one perfected and practiced by the London and Hamburg Gold Recovery Company, which has extensive reduction works at Hamburg, with offices at No. 20 Frauenthal in that city. This company works the telluride-selenic ores from Western Australia.

Of the process itself it has only been possible to ascertain that it is partially patented and partially held as a secret which the specifications of the patent do not disclose. What is known is that by this process telluride and selenic ores containing gold are pulverized and digested in a solution of cyanide of potash and cyanide of bromium, in proportions of 75 per cent of the former to 25 per cent of the latter The method by which the gold is precipitated from the solution is part of the carefully guarded secret concerning which no information can be obtained, but it is certain that the process recovers 95 to 96 per cent of the gold contained in the ores, and this proportion is often as high as 97 or even 98 per cent.

The company, while naturally refusing to disclose further details of its perfected method, will be willing at any time to make tests of American ores and give exact reports of results. Samples of ore for this purpose should contain not less than 200 pounds.

FRANK H. MASON,
Consul-General.

BERLIN, GERMANY, *August 4, 1903.*

MINERAL OUTPUT OF RUSSIA.

(*From United States Consul-General Holloway, St. Petersburg, Russia.*)

The scientific mining committee has just issued a pamphlet containing full statistics on the mining industry in Russia for the year 1900.

Iron.—The richest yield was obtained from the iron mines. The total amount of iron ore mined was 6,730,000 tons, out of which 3,233,000 tons of pig iron were smelted. The southern part of European Russia yielded 3,792,000 tons of iron ore; the Ural Mountains, 1,828,500 tons; Poland and the northwest Provinces, 533,000 tons; the Moscow region, 426,000 tons; Finland, 98,300 tons; the northern Provinces, 37,760 tons; Siberia, 10,440 tons; and the Caucasus, 3,900 tons. The total number of men employed in the works was 57,752.

Pig iron was smelted at 182 works with 302 high furnaces. Iron was worked at 137 works and steel at 82. The total amount of steel obtained was 2,441,930 tons.

Gold.—The next ore mined, approaching iron in value, was gold. The total amount of gold sand and dirt washed in Siberia, the Urals, and Finland was 24,615,117 tons, which yielded 2,367.2 poods (85,704 pounds) of gold, valued at 43,797,687 rubles ($22,555,809). The greatest quantity of gold was extracted in eastern Siberia, viz, 1,645.2 poods (59,411 pounds); in the Urals, 539.24 poods (19,472 pounds); and in western Siberia, 152.35 poods (5,500 pounds). The workmen employed in all the gold mines numbered 90,988.

Platinum.—The platinum extracted amounted to 310.27 poods (12,204 pounds), valued at 4,159,625 rubles ($2,142,207). The platinum was extracted exclusively in the Perm Province and chiefly in the Goroblagodatski district.

Silver.—Of silver 126 poods (4,550 pounds) were mined, and 220.39 poods (7,958 pounds) extracted from gold-smelting laboratories, the total being valued at 86,080 rubles ($44,331).

Copper.—Copper ore was mined as follows: Eighty-nine thousand four hundred and forty tons in the Ural Mountains, 89,000 tons in the Caucasus, 11,695 tons in the Kirghiz Steppes, and 6,517 tons in Finland. It was worked at 21 works, of which there were 10 in the Caucasus, 5 in the Urals, 3 in the Kirghiz Steppes, 2 in the Altai Mountains, and 1 in Finland.

Lead.—Of lead 243 tons, valued at 33,700 rubles ($17,355), were smelted at 3 works and 1 mine. The Altai and Nerchinsk districts and the Kirghiz works handled each about one-third of the whole.

Zinc.—The smelting of zinc took place, as heretofore, exclusively in the Bendin district of the Petrokov Province (Poland), wherein 6,571 tons of zinc, valued at 1,274,000 rubles ($656,110), were produced.

Mercury.—Mercury was extracted in the Bakhmut district of the Ekaterinoslav Province, where there are layers of cinnabar, from which 98,790 tons of ore were obtained, and 336 tons of mercury smelted in the works established near the layer. Cinnabar was also extracted in the Daghestan district and in the Caucasus. The total amount of mercury obtained was valued at 830,000 rubles ($427,450).

Manganese.—In 1900 Russia produced 884,200 tons of manganese, which, it is claimed, is the largest amount produced by any country in the world. The output was valued at 1,960,000 rubles ($1,009,400). The mineral was obtained from 372 mines, viz, 728,700 tons from the mines in the Kutais Province and 155,300 tons from those in the Ekaterinoslav Province.

Tin.—The only tin smelted in Russia was at Wiborg, in Finland, where the output amounted to 9,389 pounds.

Naphtha.—The total yield of naphtha amounted to 11,439,245 tons, valued at 99,470,000 rubles ($51,227,050). As heretofore, it was chiefly obtained in the Province of Baku (Apsheron Island), yielding 95.2 per cent of the whole production, the Transcaspian and the Fergan regions yielding the remainder.

Coal.—The output of coal amounted to 15,908,500 tons, valued at 82,193,000 rubles ($42,329,395), of which pit coal amounted to 14,642,340 tons; anthracite, to 1,139,494 tons; and brown coal, to 126,666 tons. The percentages of carbon in these grades is given as 94 in the anthracite, 84 in the pit, and 60 in the brown.

The coal was mined in the following districts:

	Tons.
Donetzk region	10,833,093
Poland	4,061,700
Ural	359,200
Moscow region	284,055
Eastern Siberia	138,382
Tomsk	74,610
Caucasus	63,304
Kirghiz Steppes	61,156
All other	33,000
Total	15,908,500

In addition to the foregoing, the Donetzk region produced 2,198,920 tons of coke, the Ural 10,723 tons, and Siberia 173 tons.

Salt.—Salt was mined at the Iletzk mines in the Province of Orenburg, and in the Ekaterinoslav, Erivan, Taurida, Astrakhan, Kherson, Perm, Tomsk, and Bessarabian Provinces, as well as in the Karsk, Transcaspian, and Semipalatinsk region. The total amount of salt mined was 2,168,700 tons, valued at 7,810,000 rubles ($4,022,150).

Asphalt.—Asphalt was worked, as heretofore, chiefly in the neighborhood of the town of Syzran, Province of Simbirsk, on the right bank of the Volga, partly in the Caucasus, the Transcaspian, and the Fergan regions. The total amount of raw asphalt and neftdegil produced was 27,649 tons, and 2,370 tons of mineral tar.

Sulphur.—Six layers of sulphur—five in the Caucasus and one in Poland—produced 1,750 tons.

Asbestos.—Asbestos was taken from the Ural Mountains, in the Province of Perm, to the amount of 4,944 tons.

Phosphorites.—Phosphorites to the amount of 28,280 tons were produced in the Provinces of Bessarabia, Podolia, Kostroma, and Smolensk.

Glauber's salt.—Glauber's salt was produced in the Provinces of Tiflis and Tomsk and in the Transbaikal region to the amount of 5,550 tons.

Kaolin.—Kaolin was produced in the Provinces of Ekaterinoslav, Chernigov, Volhynia, Kief, and Kherson to the amount of 36,170 tons.

INCREASE IN MINERAL OUTPUT.

Comparing the figures of the mining industry of 1900 with those of recent years, it is evident that the mining of coal, salt, manganese, asbestos, sulphur, phosphorites, kaolin, and the naphtha by-products, as well as the smelting of pig iron, copper, and steel, show an increase, while the platinum, iron, silver, lead, zinc, and mercury industries show a decreased output. The working of gold was without change.

The mining industry in Russia is gradually progressing. The following figures of the last ten years show the number of men employed in mining works of the Empire:

Year.	Men.	Year.	Men.
	Number.		*Number.*
1891	427,387	1896	492,980
1892	443,854	1897	547,901
1893	465,012	1898	592,510
1894	462,990	1899	634,009
1895	498,351	1900	715,497

MINERAL IMPORTS AND EXPORTS.

But the home needs of the Empire are not satisfied by the home products. The reports of the customs department show that the import continues on all products of mining, except platinum, mercury, manganese, and naphtha.

The imports of mineral products during 1900 are reported to have amounted to 86,475,783 rubles ($44,535,140) and the exports to 56,142,656 rubles ($28,913,645).

The proportion between the imports and exports of the different products of the mining industries during 1900 is as follows:

Product.	Imports.	Exports.
	Tons.	*Tons.*
Iron and pig iron	163,382	5,000
Steel	23,450	383
Copper	14,200	3.8
Zinc	11,120	167
Tin	5,205	
Lead	40,150	
Stibium	1,156	
Mercury	7.8	293
Platinum		.9
Sulphur pyrite	76,529	
Pit coal, anthracite, and brown coal	4,418,200	13,294
Sulphur	25,170	
Kerosene, naphtha, and naphtha waste		1,389,198
Phosphorites	5,630	7,619
Asphalt	11,550	332
Asbestos	419	2,672
Argil	83,464	
Chile saltpeter	16,140	
Heavy spar and witherite	10,412	
Glauber's salt	3,590	

W. R. HOLLOWAY,
ST. PETERSBURG, RUSSIA, *July 16, 1903.* *Consul-General.*

MINERAL PRODUCTION OF CANADA.

(*From United States Commercial Agent Beutelspacher, Moncton, Canada.*)

Mr. E. D. Ingall, head of the miners' bureau of the Canadian geological survey, says:

The total production of pig iron in Canada in 1902 from Canadian and foreign ores amounted to 357,903 tons, valued at $4,243,545, of which it is estimated 71,665 tons, valued at $1,043,011, should be attributed to Canadian ore and 286,238 tons, valued at $3,200,534, to the ore imported. The respective columns give quantity and value of product marketed. The ton used is that of 2,000 pounds; the copper contents of ore, matte, etc., at 11.626 cents per pound; the lead shows contents of ores, etc., at 4.069 cents per pound; the nickel shows nickel contents of ore, matte, etc., at 47 cents per pound; the silver contents of ore are valued at 52.16 cents per ounce. The coke is oven coke, all the production of Nova Scotia and British

Columbia. The natural gas means gross returns from sale of gas. The oil statement includes crude oil sold to refiners and oil sold for fuel and other purposes.

The total values reported for 1886, 1897, 1901, and 1902 have been as follows:

1886	$10, 221, 255
1897	28, 661, 430
1901	66, 712, 708
1902	64, 970, 732

The rapid growth since 1897 has been largely due to the discovery and development of the gold placers of the Yukon.

The report says that notwithstanding the most gratifying increase in the total value of the production of nonmetallic minerals, the grand total of the value of the production of all the mineral industries of Canada shows a falling off of 2.6 per cent. This is due not merely to the decrease in the Yukon output of gold, amounting to $3,500,000, but also to the very considerable falling off in values of all the remaining metallic minerals other than nickel. But for the large growth of the coal and coke industry, helped by increases in many of the other nonmetallic products, the decrease in the grand total on account of the metallic class would have amounted to nearly 10 per cent.

In regard to their relative importance, the metallic industries as a group still occupy the most important place, although not leading to the extent they did in former years. They contributed about 55 per cent of the whole, the nonmetallic following with nearly 33 per cent and the structural class with nearly 12 per cent. Grouping the metalliferous class with coal and coke, about 81 per cent of the value is accounted for.

Product.		Quantity.	Value.
Metallic.			
Gold:			
Yukon			$14,500,000
All other			6,241,245
Total			20,741,245
Copper	pounds	39,168,202	4,553,695
Iron ore (exports)	tons	428,901	1,065,019
Pig iron from Canadian ore	do	71,655	1,043,011
Lead	pounds	23,000,000	935,870
Nickel	do	10,693,410	5,025,903
Silver	ounces	4,373,000	2,280,957
Zinc	pounds	166,700	8,068
Total metallic			35,653,768
Nonmetallic.			
Coal	tons	7,639,255	15,538,611
Coke	do	506,466	1,538,930
Gypsum	do	332,045	356,317
Limestone for flux	do	293,108	218,809
Petroleum	barrels	521,485	934,740
Salt	tons	63,056	288,581
Total			18,875,988
All other nonmetallic			2,369,106
Total nonmetallic			21,245,094

Product.	Quantity.	Value.
Structural materials and clay products.		
Cement, natural rock.....barrels...	124,400	$91,870
Cement, Portland.....do.....	594,594	1,028,618
Total.....	.....	1,120,488
All other structural materials, etc.....	.....	6,651,382
Total.....	.....	7,771,870
Estimated value of mineral products not returned.....	.....	300,000
Metallic.....	.....	35,653,768
Nonmetallic.....	.....	21,245,094
Total for 1902.....	.....	64,970,732

It will be noticed that although the output of pig iron from Canadian ore has fallen off, the whole iron-smelting industry shows marked growth notwithstanding. Taking the values of the coal and coke produced during 1902, together with those in the allied iron-smelting industry, an increase of nearly $4,500,000 is exhibited, showing a growth in these, the most commercially important industries of the country, more than offsetting the diminution of the $3,500,000 in the necessarily fluctuating product of the placer-gold washings of the Yukon Territory.

The per capita value of the total mineral products for 1902 was $11.87, as compared with $2.23 in 1886, the first year for which figures are available.

GUSTAVE BEUTELSPACHER,
Commercial Agent.

MONCTON, CANADA, *August 29, 1903.*

GOLD AND MANGANESE MINING IN BRITISH COLUMBIA.

(*From United States Consul Dudley, Vancouver, Canada.*)

I have recently visited Atlin, British Columbia, and vicinity. This district is very rich in gold, and there are large hydraulic plants being established there, some of which are already producing gold in very considerable quantities. There is one dredging plant in process of construction; it is expected that it will be in operation before the close of the present season. This dredging plant is the first that I have seen building in the interior. It is quite a different operation from dredging work on the bars of rivers which I have seen heretofore. A large basin is excavated, in which the dredge is built. A ditch, 7 miles long, brings water with which to fill this basin and float the dredge when completed. This will also furnish power to develope electricity to operate the machinery on the dredge. The advocates of the dredge proposition think it superior to the ordinary hydraulic work, for the earth that has been washed fills up the space immediately in the rear and is not thrown down into the stream, as is the case with the hydraulic companies. This dredge is expected to dig into the benches and make its way, leaving the ground very much as it found it, except that it will have extracted the gold.

The Atlin gold is generally not as fine as is found in the beds of streams in other districts. There are some individual miners who seem to be doing well in this district, but it does not appear to me to be a country in which men with small capital can do very much, but at the present time wages are very high. The ordinary pick-and-shovel men are paid $3.50 per day and board, and their expenses into the country in the spring of the year and out again in the autumn; they can save nearly everything they earn if they are pleased to do so.

Returning to Atlin after a visit to one of the creeks, I noticed a great bank, which at first seemed like snow; upon a little further examination I thought it was alkali, such as I have often seen in New Mexico and other places in the Southwest. On inquiry I found that it was manganese. One gentlemen told me that he had investigated this great deposit and had dug down 15 feet through a pure body of manganese. It appears almost like potter's clay of the finest quality. I was assured that there is unlimited quantities of this mineral in the vicinity of Atlin, but the present freight rates make it impossible to deliver this to the iron manufacturers at a profit. I have very little doubt that the time will soon come when this will be a very valuable deposit, one to be developed at great profit; to-day it appears to be valueless. It is my opinion that some of our manufacturers of steel in the United States would do well to investigate this large deposit of manganese.

There are new mines being discovered in the vicinity of Atlin constantly, and I believe that this will eventually become one of the largest mining districts on this coast, but, as I have previously said, it will require large capital for its development. At the present time there are five hydraulic propositions under development. Three of these are now sending out gold frequently, which I am informed is secured at a price which yields good profit on the investments. There are others under process of development that are expected to be in operation before the end of the present season or, at least, early next year.

L. EDWIN DUDLEY, *Consul.*

VANCOUVER, CANADA, *August 13, 1903.*

No 278—03——8

REGULATIONS FOR FOREIGN COMMERCIAL AGENTS IN EUROPE.*

(*From United States Consul Monaghan, Chemnitz, Germany.*)

BELGIUM.

Traveling agents, when supplied with regular cards of identification (Legitimationskarte), are exempt from the payment of a business tax in Belgium. They may carry samples but no salable goods. They may purchase goods from merchants or producers and take orders for the lines of merchandise which they carry. Samples stamped with the country of their origin are admitted free of duty if accompanied by a "sample passport;" if not stamped with the country of their origin, they must be supplied with the Belgian stamp on payment of the regular duty. Upon reexportation of the goods, such duty is refunded.

Commercial agents who carry salable goods with them are obliged to take out a trade license in the first city in which they arrive. The amount of the fee exacted for such a license varies, as additional payments of diverse kinds may be legally required in specific cases. The refundment of duties paid upon salable goods is prohibited.

Samples of wines are admitted free of duty when the authorities feel convinced that it is the honest intention of the importer to use them solely as samples and when the capacity of the bottles does not exceed 15 centiliters (5.07 fluid ounces).

BULGARIA.

Commercial agents who are supplied with business identification cards and passports issued by their own country may take orders from merchants or producers without the payment of a trade tax and may carry samples for this purpose. Salable goods may not be carried when on the road. Samples of goods which are subject to duty are temporarily admitted free of duty when the agent has observed all the prescribed tariff formalities requisite to insure their reexportation or deposit in a port of entry.

Every traveling agent must report to the chamber of commerce or other authorities of the locality which he canvasses the name of the firm represented by him, and must also produce to the authorities a certified copy of his power of attorney. Powers of attorney issued by unknown firms must be certified to by the diplomatic representative of the agent's country and also by the Bulgarian Minister of Foreign Affairs. Boundary officials may only admit agents whose passports and business papers are in proper condition.

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* For further information on this subject, see DAILY CONSULAR REPORTS No. 1773 (October 13, 1903).

DENMARK.

Traveling agents are required to pay an annual trade tax of 160 crowns ($42.88) in Denmark. In case the agent represents several houses, he is required to pay the above full amount for the first house and half that sum for each of the other houses. The date of the payment of the tax is counted as the first day of the year. Payment must be made at the first custom-house at which the agent arrives. In the way of papers, the agent must produce either an attest from his home government officials, giving his name and that of the firm which he represents, or a power of attorney issued by his firm and certified to by some notary public as well as by a Danish consul. It is well to bear in mind that the legalization of the signature to the power of attorney by some consul of the agent's country residing in Denmark is insufficient. The receipt issued to the agent by the customs officials on payment of the tax must be visaed by the local police authorities before such agent is entitled to conduct his business. A similar visa must be obtained from the police department of every city in which business is done.

The above-named papers may not be made out in the name of a firm in such a way as to enable different members to use the same, but must be made out to one specific person. In cases where a house is compelled to change its traveling agents in the course of the year, the proper transfer of the trade license to the new representative is made by the Danish officials free of charge. On the other hand, a retransfer of the license to the original bearer is not permissible.

Traveling agents may do business only in Copenhagen and in such other Danish cities as are included in the definition of "trading cities," or "Handelsstaedte." However, even in these cities business with wholesalers, retailers, manufacturers, etc., must be confined exclusively to the particular line of goods regularly handled by such parties. The single contracts and sales to wholesalers must be confined to that class of goods which wholesalers are permitted to deal in under the law of December 29, 1857. Under this law the minimum quantity that may be the subject of a transaction is, in general, limited to 40 crowns ($10.72).

Samples are dutiable, but on their reexportation such duty is refunded on demand under limitation of the following regulations:

1. The samples must, on the importation, have been designated as intended for reexportation. The contents of the sample cases must be designated with the greatest possible accuracy as to kind, number, distinguishing labels, etc. A summary specification must be subjoined to the custom-house receipt to expedite matters on the reexportation of the samples.

2. Aside from these requirements the customs officials may demand any further declarations or papers that in any particular case may be deemed advisable.

On refusal to meet these additional demands, a record is made upon the custom-house receipt to that effect, and the deposited duty is refunded only upon direction of the general-director of taxes in consequence of an appeal.

3. All imported goods must be reexported if advantage is to be enjoyed of the refundment of the duty.

4. Upon the reexportation of goods, which must obtain within four months after their importation, a written and sworn statement or declaration as to the identity of the goods must be added to the original custom-house receipt.

5. The refunded duty must be called for within twenty-eight days after the exportation of the goods.

6. In every single case of refundment, a tax stamp of 65 öre (17.4 cents) must be attached to the original declaration of reexported goods.

FINLAND.

No business tax is levied in Finland in case of foreign traveling agents. Samples are subject to the following regulations:

A traveling agent, who is supplied with the proper passports and business identification card, is admitted into the country, and in case he carries samples these must be supplied with custom-house stamps. At the same time the customs authorities must make a complete and specific list of such samples, which the traveling agent is required to produce at the custom-house from which he wishes to reexport his samples. If the agent, instead of depositing the regular duty upon his samples with the customs authorities, prefers to give bond for the amount, such a bond must be executed by two or more citizens of Finland. In case the bondsmen are unknown to the Finnish authorities their signatures must be legalized by a local notary public. All samples not reexported from the country within four months from the time of their importation forfeit their right to exemption from duty. The deposit is, as a result, canceled, or in case bond was given the agent, or in his failure his bondsmen, is liable for the amount of the duty.

J. F. MONAGHAN, *Consul.*

CHEMNITZ, GERMANY, *August 10, 1903.*

FAILURE OF THE FRENCH SARDINE CATCH.

(From United States Consul Ridgely, Nantes, France.)

I have to report another very bad year for the French sardine industry, of which Nantes is the center of trade. Last year great misery was entailed upon the fishermen of Brittany and great loss to the packers and exporters by the almost complete failure of the sardine catch, and it has been feared up to the present date that this year would be as bad as 1902, if not worse. Recently, however, sardines have begun to appear in small quantities off the western coast, and it is now hoped that the catch may improve, but it is almost certain that this will not exceed 25 per cent of a good, average season. Two reasons are ascribed for the failure of the famous little fish to appear in their usual plentitude. First of these is the excessively cold spring and summer; the second is the scarcity and high price of the codfish roe (la rogue), which the fishermen use for bait in attracting and holding the sardines on the fishing grounds. The situation in this respect is quite the same as last year, and much discouragement has been felt in consequence among the thousands of fishermen and packers who exploit the industry. It is also reported here that this year the Portuguese and Spanish sardine catch has been below the normal.

Last year the French catch was less than 20 per cent of the average, and up to the present date the catch of 1903 has been even worse than that of last year; but, as above stated, the fish are at present beginning to make their appearance and, although the season is too far advanced to hope for anything like an average catch, it is believed that better results will be realized than were at first anticipated.

Sardine fishing is conducted all along the western coast from Brest to La Rochelle, and the best season is generally from about the 1st of July to the 1st of September. Thousands of fishermen devote all their energies to the work of netting the famous and toothsome little fish, which in this part of the Bay of Biscay are considered of better quality than elsewhere in the Atlantic or Mediterranean, and many great packing factories along the coast buy the daily catch and prepare it for immediate packing in oil. The sardines of the Nantes district, including Brest and Lorient, are famous and are particularly popular in the United States.

An idea of the importance of the sardine industry may be had when the exports to the United States alone are considered. During the fiscal years ended June 30, 1902 and 1903, they reached the following declared value:

From—	1902.	1903.
Bordeaux	$603,326	$411,768
Nantes and agencies	611,338	341,303
Total	1,214,664	753,071

SPANISH SARDINES IN FRANCE.

In considering the above figures it should be remembered that of the exports for 1903 about 30 per cent came out of the surplus stocks of the catch of 1901-2. This year, unfortunately, there are no surplus stocks, and consequently the great exporting houses are virtually unable to fill any very considerable orders for French sardines at all. In this emergency some of the houses are supplying their French buyers with Spanish sardines, and it is now estimated that fully 200,000 cases of the Spanish product will enter France this year. The total average annual French consumption of sardines is from 600,000 to 700,000 cases, each case containing either 100 quarter boxes or 50 half boxes. The total annual exportation is about 600,000 cases.

Spanish sardines are not exported in any considerable quantities to the United States for the reason that they are very much larger than the American taste demands. For example, in the Spanish quarter box there are only 5 or 6 sardines, while the so-called standard American quarter box must contain from 12 to 18. Spanish sardines, while not equaling the French, are considered here much better than the Portuguese article.

PRICES.

Sardine packers claim that in order to do business on a profitable basis they must buy their sardines from the fishermen at from 10 to 15 francs ($1.93 to $2.89) per 1,000, meaning thereby a fish of average size which counts from 10 to 12 in a quarter box. This indeed was the average price for many years. Last year, however, owing to the failure of the catch and the high price of bait, the price paid to the fishermen was from 30 to 35 francs ($5.79 to $6.75) per 1,000, and this year from 40 to 50 francs ($7.72 to $9.65). As a consequence the price of French sardines to the consumer has nearly doubled. The best-known brands of choice sardines which two years ago sold currently at from 30 to 35 francs ($5.79 to $6.75) per case are now quoted at from 60 to 70 francs ($11.58 to $13.51). The following are the prices at which Spanish sardines are quoted in this market: For cases of 100 quarter boxes, each box containing from 5 to 6 sardines, 26 francs ($5) per case; for cases of 100 quarter boxes, each box containing from 7 to 8 sardines, 28 francs ($5.39) per case; for cases of 50 half boxes, each box containing from 10 to 12 sardines, 37 francs ($7.14) per case.

AMERICAN SARDINES.

While up to this moment France has furnished the United States with choice sardines, there is no reason why, under existing circumstances, cheap American sardines should not find a market in France, provided, of course, they are of as good a quality at least as the Spanish product and a little cheaper in price at the outset. The duty on sardines is 30 francs ($5.80) per 100 kilograms (220 pounds).

BENJ. H. RIDGELY, *Consul.*

NANTES, FRANCE, *August 14, 1903.*

NEW SUGAR RÉGIME IN FRANCE.

(*From United States Consul Ridgely, Nantes, France.*)

On and after September 1, 1903, the French people will be able to buy one of the great staple necessities of life very much cheaper than they have ever bought it before in France. The new law removing nearly 60 per cent of the customs and internal-revenue tax on sugar goes into effect on that day. In 1887 the tax on French sugar, whether imported from the colonies or manufactured at home, was fixed at $11.58 per 100 kilograms (220 pounds) plus $1.35 additional on sugar imported from other countries than France and her possessions. In 1897 this tax was maintained and exporters of sugar were granted an export bounty of about $2 per 100 kilograms on all French sugar exported to foreign countries. The new law reduces the customs and internal-revenue tax from $11.58 to $4.82 per 100 kilograms, and also suppresses the export bounty.

This means that the grocers and other dealers who, since 1897, have been paying the tax of $11.58 per 100 kilograms (220 pounds) will now buy their sugar at $6.76 cheaper per 100 kilograms. The consumers will of course profit accordingly. For example, the current retail price for white cut loaf in France at present is 1.05 francs per kilogram (about 10 cents per pound); for white granulated sugar, good quality, 1 franc per kilogram (about 9 cents per pound). On and after September 1 it is understood that white cut loaf will be generally reduced from 1.05 francs to 65 centimes per kilogram (about 6.5 cents per pound), and white granulated from 1 franc to 60 centimes per kilogram (about 5.75 cents per pound). The cheaper sugars will of course be reduced proportionally. It is needless to say that the French people, who are particularly fond of all sweet things, are looking forward with great pleasure and satisfaction to the reduced prices, which will not only give them cheaper sugar for the ménage, but cheaper sweets of all varieties, such as preserves, candies, sirups, liqueurs, biscuits, and all similar products into which sugar enters as a chief ingredient and which are at present very dear in France. One of the practical results already announced for September 1 will be the reduction of 20 centimes per kilogram (nearly 2 cents per pound) on the price of chocolate, which is one of the most important staples of the country. The manufacturers of French sweet biscuits, known to the commerce of the world as "petits beurres," have also announced a reduction of 1 cent per pound on that famous product, of which Nantes is the center of manufacture. Owing to the high price of sugar, France has heretofore imported from England a very considerable percentage of her fruit preserves. One result of the new law will probably be the largely increased manufacture of products of this nature in France and consequent loss to British exports.

BENJ. H. RIDGELY, *Consul.*

NANTES, FRANCE, *August 20, 1903.*

COMMERCIAL CONDITIONS IN NIUCHWANG AND MANCHURIA.

(*From United States Consul Miller, Niuchwang, China.*)

NIUCHWANG.

The ice broke up in the river and the port opened for trade much earlier than usual, and the traffic of the first quarter was heavier than ever known. The import of American goods on the whole is about equal to the same period of last year, and that was one of the best.

American drills were far in excess of any previous half year. American sheetings fell below last year, but are greater than in any previous year. American flour imports were less than any year since the importation began. American kerosene imports were heavy, due to the light imports of last year and the absolutely bare market when the port opened. During July the largest shipment of Russian oil that ever came to this port—25,000 cases—arrived direct from Russia. It reached here in excellent condition. It was put up in strong cases and the waste was nominal, while American oil reaches here with broken cases, in a damaged condition, and with heavy wastage.

MANCHURIA.

Lumber.—Most of the timber and lumber coming into Manchuria is for the Russian Government. As this comes in free of duty, it does not appear in the customs returns. Considerable has come to Dalny, Port Arthur, and Niuchwang from America during the first half of the year, but the competition from Siberia and the Yalu is likely to drive out most of the American lumber. That from Siberia and the Yalu is fairly good for general building purposes, but that which I have seen is not the equal of Oregon pine, especially for bridge timbers.

Grain exports.—The Chinese Government did not permit the export of wheat, millet, or grain of any kind to a foreign country, but the Russian administration removed this embargo and as a result large quantities of grain have been exported to Korea and Japan during the past three years. As the export of grain is not now permitted from other ports of China to foreign countries, extensive shipments of wheat from Shanghai have been coming to this port recently and going to Japan. Of late, an order has been issued prohibiting further exports.

Opening of new ports.—Formerly, almost the entire trade of Manchuria passed through the treaty port of Niuchwang, and the customs returns gave the amount of exports and imports; but since the completion of the Siberian Railroad, and its opening for traffic to Vladivostock, Dalny, and Port Arthur last year, considerable quantities of both exports and imports have passed through these ports and the local customs returns no longer reveal trade conditions. Inasmuch as there has been no customs established at either Dalny or Port Arthur up to the present time, it is not possible to give any reliable returns of the total trade of Manchuria; besides, the deviation of trade makes the comparative statement of the true state of trade in this territory unsafe.

American trade.—I would advise all Americans doing business in this territory, and those expecting to do so, to make a careful study of Russian systems, ideals, methods, and character. In four lines—cotton goods, kerosene, lumber, and flour—our goods will be met by Russian competition. In the matter of economic conditions, I think Russia has every advantage in flour and lumber and will soon be our most active rival in these lines in the general trade of China. Kerosene, I am advised, Russia can produce cheaper, and I know it sells cheaper, although the product is inferior in quality, but this is not so serious a drawback for the Chinese trade. In cotton goods, while her trade is growing, it is handicapped by inability to meet American prices.

Manchuria is a rich and undeveloped country and is capable of sustaining many millions more people than now occupy it. Under the Chinese Government it was growing fast in population and in trade. Its growth of exports and imports were far in excess of any other part of China, and in no part was American trade improving so fast. All of this growth was a result of expansion in agriculture alone. Manchuria has great opportunity for further expansion in agricultural lines, and under Russian occupation there should be a splendid market here for plows and various kinds of agricultural implements.

If the iron, coal, copper, silver, and gold mines of Manchuria are developed, it ought to become a good field for American capital, machinery, and skill in mining. For the present the market ought to increase for beer, wines, tinned meats, vegetables, milk, fruits, etc. Harbin, Liao-Yang, Dalny, and Port Arthur are increasing in Russian population and should be good markets in all of these lines.

I am informed that bids were received at Port Arthur by the Russian authorities a few days ago for the construction of electric-light plants and electric railways for Moukden, Niuchwang, and Harbin.

HENRY B. MILLER, *Consul.*

NIUCHWANG, CHINA, *July 28, 1903.*

SEA SERVICE OF THE CHINESE EASTERN RAILWAY.

(*From United States Commercial Agent Greener, Vladivostock, Siberia.*)

On May 16, Capt. S. I. Kazi, commander of the first volunteer fleet steamer to reach Vladivostock in 1879, arrived here from St. Petersburg on a special mission in connection with the condition of the business of the sea service of the Chinese Eastern Railway. He left on May 25, and as a result of his visit there has been a cut in salaries and the office of the northern agent has been abolished. The expected transfer of the whole line to private parties has, however, been postponed. The only certain thing is the loss of over 2,000,000 rubles ($1,030,000) on the two years' operation of the company. Captain Kazi, however, will not assume the management, but brought assurance that the Minister of Finance had not forgotten his promise to Vladivostock and her merchants that the city would not be discriminated against by favors to Dalny and Port Arthur.

The business of this Manchurian sea service should have been profitable, and would have been, if properly exploited, backed as it was by the Imperial Government. The southern centers of commerce—Shanghai, Tientsin, Hankau, Niuchwang, Chefoo, Chemulpo, Fusan, Kobé, Osaka, Nagasaki, Hakodate (not even omitting Vladivostock, which has little to export)—ought to have guaranteed sufficient cargoes, the first need of successful steamship ventures. Here are some items which would seem to justify such expectation:

Transportation of tea from Hankau and Shanghai to Dalny, Vladivostock, and Nikolaefsk, say 36,500 tons; transportation of goods brought by the railroad to Dalny, and those imported into Dalny by sea, approximately 155,200 tons. It should be noted that this figure represents only the traffic of the Chinese Eastern Railway when it was not regularly organized. With the introduction of improvements and greater system the figures will be considerably augmented.

Besides the foregoing, there are the cargoes to be transported between the several points of Peter the Great Bay and its tributaries, say 9,140 tons; transportation of cargoes between the several points in the Gulf of Tartary, between Sakhalin Island and the mainland, 63,890 tons; transportation from Shanghai to Vladivostock (flour, rice, dry goods, hardware, salt, etc.), about 5,000 tons; transportation from Chefoo to Vladivostock and to the Quandoon of about 90,000 Chinese coolies at 10 to 15 rubles ($5.10 to $7.65) per head; cotton goods and wool from Shanghai to Korea, to Chemulpo particularly, 4,000 tons; fish from Sakhalin, fish manure to Hakodate, and return cargoes of rice and salt, say 8,000 tons; the interchange of cargoes between Port Arthur and Vladivostock, about 10,000 tons; interchange cargoes between other ports, say 20,000 tons. Here we have about 300,000 tons of cargo to be carried by Government-subsidized steamers. This amount exceeds the capacity of the Chinese Eastern Railway line of steamers ten times. Hence one would suppose the steamers could have worked at a profit under ordinary business management.

While the experience of this line has been the very opposite of profitable, it does not follow that there is no vitality to Russian enterprise in the Far East, or that such ventures are at present premature, as has been urged. Enterprises of this character require time for their complete exemplification and adaptation to local conditions. There were unforeseen and aggravated circumstances attending the inception of the enterprise—the prevalence of the cholera, the uprising in China, the plague, etc.—worse even than inexperience of managers, want of economy, and absence of practical knowledge. Such untoward circumstances are temporary and not insuperable. There is no doubt that with more energetic management the business can still be made profitable. Soon the railroad trains will be run on strictly schedule time, and under the new consolidated management will be able to furnish cargoes to the steamers, so that the prospect of a transfer of these steamers to private hands is improbable. If the Government sees no profit in continuance they will most likely be sold.

RICHARD T. GREENER,
VLADIVOSTOCK, SIBERIA, *May 25, 1903.* *Commercial Agent.*

SIBERIAN NOTES.

(From United States Commercial Agent Greener, Vladivostock, Siberia.)

COOLIES.

The general governor of the Amur has issued an order that no Chinamen, Koreans, or foreigners shall be employed in the gold mines of the Amur Province except by special permission in each case. Meanwhile, the mining inspector of the Maritime Province reports that the merchant steamers on the Amur are carrying many

Chinese and Koreans to the Amgoon mines, where the men wander about in the forests, unemployed, forming a menace in case of an outbreak of cholera. A supplementary order now forbids all river steamers to carry these coolies to the mines, unless specially contracted for by gold-mining companies.

SIBERIAN RAILROAD STATISTICS.

The ministry of communications has signed a contract with the International Sleeping Car Company to run weekly, beginning April 14, 1903, five lines of fast trains between Moscow and the terminals of the Siberian Railroad; April 14, 1904, seven lines must be run; January 14, 1905, besides the seven fast trains, special trains de luxe, express, from Moscow to the terminals of the Chinese Eastern Railroad and return and from Moscow to Vladivostock and return. The speed of the trains de luxe between Moscow and Irkutsk must be greater than the speed of the usual "fast trains." For the express trains the International Company will be allowed to charge for first class 2½ cents additional per mile; second class, 2 cents, including the Government rate. The company must conform to all custom-house regulations and guarantee baggage and merchandise delivery at house address at an extra charge to be approved of by the railway authorities. This contract will last for twelve years.

The through fast trains began running May 1, with the following rates: First-class tickets, Dalny to St. Petersburg, $138; second-class, $92; 36 pounds of baggage free; overweight charges, $1.37 for every 10 pounds (Russian). The time is now scheduled at fifteen days; the average is seventeen. All fast trains have the movable seat, which serves for sleeper; for these there is no extra charge. Each train includes a dining car, where meals of good quality can be had at an average cost of $1.50 per day; wines, etc., extra. There are two changes between Dalny and St. Petersburg—at Missovaia, eastern side of Lake Baikal, and at Moscow. From Vladivostock there are two additional changes—at Grodekof and at Harbin. From Vladivostock to Grodekof accommodations are good, but from Grodekof to Harbin they are still poor; hence, travelers who want comfort and safety should take the route from Dalny rather than from Vladivostock.

At the present time the through fast trains leave Dalny only once a week—on Sundays. Passengers leaving Vladivostock can only make connection with this fast train at Harbin by leaving here on Tuesdays and Saturdays.

The latest report of the committee of management gives the length of the road as 2,066 miles, and contains the following information regarding the traffic of 1901:

Trains in operation	number	74,198
Average cars to train	do	16.54
Passengers carried, all classes (in 1900, 926,976)	do	1,124,300
Passenger fares		$1,419,187.00
Amount paid for baggage carried		$412,608.00
Average amount paid by each passenger for baggage		$1.53
Amount paid for freight transportation:		
Merchandise (2,409,195 tons)		$7,713,737.00
Average per ton		$3.20
Total income		$9,818,219.00
Total expenses (excluding extra ones)		$9,639,763.00
Net profits		$178,456.00
Extra and unforeseen expenses, force majeur		$1,218,252.00
Actual deficit		$1,039,796.00
Actual deficit in 1900		$1,331,024.00

The income exceeds the estimate by $2,539,209; the total expense exceeds the estimate by $2,293,467; the special expense exceeds the estimate by $672,762; and the deficit exceeds the estimate by $427,020.

KOREAN GRAIN FOR VLADIVOSTOCK.

Southern Korea has a good harvest of cereals this year. Prices for cereals are high in Vladivostock, and are likely to go higher. Russian merchants are seriously considering the profit in importing grain from southern Korea. The Japanese are already exporting grain from Fusan, and also rice. The grain could easily be brought here from Masampo, where there is a Russian vice-consulate to advise. Prices are very low in Masampo, and transportation would cost only a few cents per hundred. A local measure (about 27 pounds) of rice, uncleaned, costs 45 to 55 sen Japanese (22 to 27 cents). Cleaned rice is sold by a measure of about 35 pounds at 1.50 yen (74.7 cents) to 1.80 yen (90 cents). Barley is harvested in the spring. One measure of 27 pounds costs about 33 sen (16 cents). Payment can be made in local coin. Samples of this Korean barley and rice have been on exhibit at the office of the board of trade broker. As usual, there is much talk here about what Siberian merchants could do in these lines; but meantime the Japanese and Chinese are busily engaged in the traffic.

R. T. GREENER,
Commercial Agent.

VLADIVOSTOCK, SIBERIA, *May 30, 1903.*

TAHITIAN COPRA FOR THE UNITED STATES.

(*From United States Consul Doty, Tahiti, Society Islands.*)

Copra is the most important export from the colony to the "States." It is gratifying that the latter received during the fiscal year ended June 30, 1903, a quantity valued at $201,891.43, which is slightly more than double the value of that exported during the preceding year. The blight on the cocoanut trees remains in some of the Society Islands, but has passed for the most part from Tahiti, the largest one of the group. It is to be regretted that a large quantity of copra goes to European ports by sailing vessels, under long charter, that bring goods from France to this place. The importers in San Francisco probably could secure this foreign consignment by making arrangements with the leading merchants here, extending over long periods of time. It is to be said that the best way for importers in San Francisco to secure the copra would be to organize a company and lease or buy large tracts in these islands and become producers. The labor problem could be solved by paying living wages to natives and, further, by importing cooly labor. There is a fine opportunity for American capital to own the best land for cocoanut culture. Land in this colony can be had, but it requires, generally, a negotiation that extends over three or four months. Probably the finest tract for a large cocoanut plantation is that situated on the island of Moorea, which is 12 miles distant from Tahiti. The tract is a large valley called "Opunohu," containing 3,000 acres of soil adapted for the culture of cocoanuts, cotton, sugar, coffee, and probably other tropical plants of commerce. The price ($20,000 gold) is very reasonable To clear and develop and plant 150,000 cocoanut trees, in the course of three or four years, there would have to be an expenditure of possibly $50,000 to $75,000 additional. The plantation after seven years would begin to bear, and doubtless continue to do so, in the ordinary course of events, for very nearly a century. To invest in land here would seem to be warranted by the proposal of the Government of the United States to build an isthmian canal next to the Galapagos group. The French possessions excel other clusters in favorable situation for commerce.

WILLIAM F. DOTY, *Consul.*

TAHITI, SOCIETY ISLANDS, *July 24, 1903.*

TAHITIAN VANILLA BEANS IN THE AMERICAN MARKET.

(*From United States Consul Doty, Tahiti, Society Islands.*)

The explanation for the decrease in the exports of vanilla beans from Tahiti to the United States is due to the fact that the demand for this grade is almost at a minimum in the markets of San Francisco and New York. The price at the former place has recently declined to 40 cents per pound. At this rate the merchants exporting vanilla from Tahiti simply have the advantage of a medium of exchange for goods imported from San Francisco. It means the avoidance of purchasing a money order—a slight consideration. It also is of service to the merchants to handle vanilla here, in view of the difficulty of forcing payment on the part of creditors who are the traders for the large establishments. The traders who are generally slow in remittances can turn over vanilla beans, as a rule, on account. The small trade is generally in the hands of Chinamen, and they encourage trade with the natives by accepting options on the vanilla output, and ultimately receive the beans in the crudest form and proceed to cure them. There can be no doubt that the curing methods employed by these small traders are defective, and therefore the Tahiti bean has steadily declined in the estimation of importers in San Francisco and New York. Knowing that the very name now is sufficient to condemn the vanilla exported from this colony, I endeavored to enlist the interest of the officials here to a plan for compulsory inspection and grading under seal, under the control of the Government. The matter, however, has not been regarded in a favorable light by the officials, although it has appealed to many planters and merchants. It is possibly my duty, although an unpleasant task, to state for the benefit of importers of vanilla beans from Tahiti that they should be very careful to examine closely any beans that they have reason to suspect have been cured by Chinamen here. To my knowledge the Chinese traders are accustomed to pick up beans cast away by others as utterly unfit for market, soak them in salt water or let them remain for a time in cocoanut oil, and then pack them in the bottoms of tins containing better grades. Chinamen will buy even moldy vanilla beans and so scatter the bad ones among good ones as to avoid ordinary scrutiny.

It is a far pleasanter task to relate that there are a few large companies, composed mostly of native planters, that are trying to put a high grade of vanilla bean on the market. No doubt later the importers in the United States will appreciate their efforts and reward them. It would be well if these planters would label their articles by a special brand and thus give guaranty as to quality.

WILLIAM F. DOTY, *Consul.*

TAHITI, SOCIETY ISLANDS, *July 24, 1903.*

INDUSTRIAL AND TRADE NOTES.

(*Prepared in the Bureau of Statistics, Department of Commerce and Labor.*)

Butter production in Siberia.—The production of butter in Siberia is keeping pace with the development of that part of Russia's railroad or transportation facilities. Russian papers report an increase in dairies from 140 in 1898 to 1,107 in 1900 and 2,500 in 1902. The butter exports increased from 5,420,000 pounds in 1898 to 39,720,000 in 1900 and 90,280,000 pounds in 1902.

Artificial pearls.—A report from the Osaka, Japan, exposition, published in European papers, says a Japanese has devised a plan for the artificial production of pearls. His method is to put a grain of sand or foreign substance forcibly into pearl oysters, which he afterwards puts back in the beds. In this way he gets pearls so like the natural pearls that connoisseurs can not tell them apart. It would be strange, thinks one writer, if they could, for the method employed by the Japanese is the one employed by nature. It is a well-known fact that pearls are produced by a grain of sand or some other foreign substance falling into the open oyster and being covered by the same substance as the interior of the shell. The pearls thus produced are being sold so cheaply that a fear is gaining ground that they may affect the market for "real" pearls—that is, pearls produced by accidents to the oysters rather than by the efforts of man. The "artificial" pearls are being put to exactly the same uses as the "real" ones.

Silk crisis in Europe.—A distinguished Italian silk manufacturer, Signor Stucchi—president of Como's Chamber of Commerce—is calling attention to the critical conditions prevailing among silk mills abroad. He seems to think the silk industries of France, Italy, Switzerland, Germany, and Austria are in danger. A savage competition has led to the production of a too cheap grade of goods. To accomplish this, the weight of the goods has been added to in the dyeing rather than in the weaving. The result is a vastly inferior product—one very deceptive but of little value. The disgusted and deceived public have turned to substitutes, articles so similar to silk that it is hard to tell them from silk. Science has helped with its power to mercerize cotton and other textiles, giving them the appearance of silk. Only a radical change can effect a reform, thinks Signor Stucchi, but no one country will be able to accomplish it; there must be a united movement of all silk-manufacturing countries. A movement is on foot for a congress or conference of the world's makers of silk.

AUSTRALIA, THE ORIENT, AND SAN FRANCISCO.

(*From United States Consul Baker, Sydney, Australia.*)

There are three lines of steamers engaged in trade between Australia and Japan, namely, the Japanese Line, the China Navigation Steamship Company, and the Eastern and Australian Company.

All three companies have about the same route, with the exception of Port Darwin, the Japanese Line omitting that port from their table. The following is a list of the ports of call for the last-mentioned steamers: Sydney, Brisbane, Townsville, Thursday Island, Manila, Hongkong, and Japan. Two of the steamers of this line have a tonnage of 2,368 tons each, and the third of 3,148 tons. The other two companies have, in addition to the above list of ports, Port Darwin. Port Darwin is the first port of call in Australia for steamers bound from Japan to Sydney, but of course when dealing with the Japanese Line Thursday Island is the first port touched in Australia. Port Darwin is occasionally omitted, but very seldom.

Very little is known in Sydney with reference to a commercial city being formed in Torres Straits. Thursday Island is in the proximity of Cape York, and is a pearl-fishing station, at which all the steamers eastern bound call. A short time ago there was an attempt made by a firm in Sydney to move their pearl fisheries from Thursday Island to Merouke, on the island of Dutch New Guinea, but it utterly failed. The idea was to evade the British tariff. As far as I know, no history of the attempt to found the city has ever appeared in print.

The vessels belonging to the China Navigation Company are the *Chingtu*, *Taiyuan*, *Changsha*, and the *Tsinan*, with a tonnage of 1,459, 1,459, 1,463, and 1,460 tons, respectively. The Eastern and Australian Line have three steamers making regular trips—the *Empire*, *Australian*, and *Eastern*, with a tonnage of 2,846, 1,783, and 2,872 tons, respectively.

There are only two lines plying between Australasia and the Pacific coast of North America—the Oceanic Steamship Company

(Spreckles Line) and the Canadian Australian Line. The first-named line is the only one trading between San Francisco and Sydney calling at Auckland, Pago Pago, Honolulu, and San Francisco. These vessels carry a great number of passengers and ship a large amount of cargo of every description each voyage. It is a regular service of one boat every three weeks, leaving Sydney ten days after arrival. The line consists of three very fine steamers—*Sonoma*, *Ventura*, and *Sierra*, with a tonnage of 3,936, 3,936, and 3,576 tons, respectively.

The steamers of the Canadian-Australian Line make monthly trips, leaving Sydney the second Monday in every month, via Brisbane, Suva, Honolulu, and Victoria, to Vancouver.

All steamers mentioned carry mails.

ORLANDO H. BAKER, *Consul.*

SYDNEY, AUSTRALIA, *July 28, 1903.*

NEW SOUTH WALES RAILWAY AND TRAMWAY AMBULANCE CORPS.

(*From United States Consul Goding, Newcastle, Australia.*)

The New South Wales Railway and Tramway Ambulance Corps* is perhaps the best organized and most efficiently drilled of any similar organization known. I have personally, as a physician, thoroughly investigated it, through the courtesy of the chief medical director and of the commissioners and secretary of the New South Wales railways, and find that it is well worthy of the first place on the list.

The corps was commenced before the present commissioners took office, but at the time of their doing so (in October, 1888) it had a membership of only 191. At the present time the membership numbers about 1,800, certified by examination as capable of rendering first aid; but more than double that number of the employees have received instruction, although, owing to the nature of their duties, many are unable to attend a complete course and therefore have not presented themselves for examination, though in many cases possessing a very good knowledge of ambulance work. The membership is widely distributed, members being found in every branch of the service, in the workshops, and at every station of importance throughout the system.

The desirability of having such a trained body of men connected with the railways of this State is very great, the circumstances of the New South Wales lines differing materially from those in older and more thickly settled countries, where towns are close together and medical aid is readily procurable. Here, however, the lines run at times for 100 miles without passing a settlement of note, and should an accident occur on such a stretch of line it is of great importance that those on the spot should be able to render "first aid" to the injured and be equipped with the appliances essential in treating injured persons.

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* The rules and regulations governing the ambulance corps, transmitted by Consul Goding with his report, are on file in the Bureau of Statistics, Department of Commerce and Labor, where interested parties may have access to them upon application.

In regard to appliances, it may be mentioned that every passenger train running outside the suburban section, and mixed trains on branch lines, are fitted with a medical chest and all ambulance requirements in case of an accident. Ambulance equipment is also kept in reserve at a large number of railway stations, and each wrecking car is fitted with a medical chest and full equipment. The ambulance equipment in August of last year, the date of the last annual report of the corps, comprised 126 chests, 254 stretchers, 40 hampers or small boxes, 7 wheel litters at large centers, and 1 ambulance wagon (horse) at Sydney, the terminal station.

The work of instruction is conducted by the railway medical officer, who regularly visits the various centers throughout the State. He is assisted by some of the older members of the corps, who, as branch secretaries, advance the interests of the corps by keeping members in touch and proficient by periodical drills and by the formation and carrying on of additional classes. Much assistance is also rendered by medical men in some of the larger centers in the country. To deal with the detail work in connection with the working of the corps and to promote its interests generally, a competent officer has been appointed as general secretary, the whole of whose time is devoted to the work, his salary being paid by the commissioners.

With a view to encouraging the staff to take a course of ambulance training, examinations of the various classes are held annually and each member passing the primary examination, which includes the practical treatment required in rendering "first aid," is presented with a framed ambulance certificate. A second course of a more advanced character is provided for, and successful candidates at this examination are presented with a silver medal suitable for wearing as watch guard. As a special acknowledgment of the exceptional services rendered by some members, gold medals have been presented in a few cases.

For the purpose of increasing the interest in the movement the commissioners some years ago instituted a challenge shield for annual competition among the different branches of the corps. This is a handsome trophy, and each year the names of the winning squad of four men are inscribed on a space provided for the purpose, space being allowed for ten years. It should be added that small gold replicas of the shield are given to the winning team each year, the second team having similar replicas in silver and the third in bronze.

As a further encouragement the commissioners have annually given monetary grants, amounting last year to $1,250, which is distributed among branch secretaries, who maintain a certain number of drills to keep up efficiency. It should be mentioned that the commissioners grant free passes to employees to enable them to attend classes.

The practical value of the knowledge gained by the members of the corps has been manifested on a number of occasions, and the efficiency and skill of the treatment rendered has often been warmly recognized by the medical men who have subsequently treated the cases. The aid of qualified members is often called into requisition, and annually several hundreds of occasions are reported to the corps secretary of such service having been rendered, many cases of accident to members of the general public and unconnected with the railways.

F. W. GODING, *Consul.*

NEWCASTLE, AUSTRALIA, *July 14, 1903.*

IMPORTS INTO THE TRANSVAAL.

The consular agents at Johannesburg and Pretoria have transmitted printed official returns showing the imports into the Transvaal during the five months ended May 31, 1892 and 1893. The statements are too long for publication in detail, but those interested therein are referred to ADVANCE SHEETS NO. 1709, in which is printed a full list of the imports for the first three months of 1903, both lists being made up of similar articles.

The value of the imports into the Transvaal for the first five months of 1903, as given in the official returns, was as follows: From and via Natal, £4,176,741 ($20,326,308); from and via Cape Colony, £4,048,997 ($19,704,444); from and via Delagoa Bay, £1,536,628 ($7,477,802); total, £9,762,366 ($47,508,554)—being an excess over the five months of 1902 of £6,284,201 ($30,582,641).

Trade opportunities which the repairing of the waste of war is opening up in South Africa are important. The following leading articles in the list of Transvaal imports are selected as those wherein the United States can take a leading position. The values are given in round numbers:

Principal imports into the Transvaal, first five months of 1903.

Article.	Value.	Article.	Value.
Agricultural implements	$400,000	Groceries	$545,000
Animals (cattle, horses, mules, and sheep, chiefly)	1,850,000	Jewelry	270,000
Chemicals and toilet articles	570,000	Leather manufactures	515,000
Cyanide of potassium	560,000	Machinery, agricultural, electrical, manufacturing, etc., but chiefly mining	5,100,000
Apparel and slops	3,220,000	Meats, preserved and fresh	3,210,000
Boots and shoes	1,520,000	Milk, preserved	695,000
Butter	695,000	Mineral oil	135,000
Cotton manufactures	860,000	Spirits (liquors)	965,000
Flour	1,095,000	Sugar	495,000
Fruit, dried, fresh, and preserved	360,000	Vehicles (carts, carriages, wagons, bicycles, wheelbarrows, etc.)	1,465,000
Furniture	1,610,000	Wood, rough and prepared	2,775,000
Haberdashery and millinery	3,265,000	Total	36,005,000
Hardware	1,995,000		
Iron and steel (fencing ware and galvanized and corrugated iron, chiefly)	1,830,000		

COTTON CULTIVATION IN BRITISH WEST AFRICA.

(*From United States Consul Halstead, Birmingham, England.*)

The following editorial in the Birmingham Daily Post of August 14 puts in condensed shape a report, printed in the official organ—the West African Mail—of the experts employed by the British Cotton Growing Association. They report upon the cotton-growing prospects of the West African colony, and it may serve to indicate to the American people the British energy now put into the effort to be independent of our cotton supplies.

The British Cotton Growing Association have commissioned their expert at Lagos to report upon cotton-growing prospects in British West Africa. Professor Hoffman, the expert in question, has visited nearly every important center in the Yoruba country and is impressed with the great interest taken by the natives in the cultivation of the soil. These people, who bear some resemblance to American negroes, are particularly anxious, we are told, to extend the area of cotton growing in their country. It appears that they have tried coffee and cocoa, but neither of these commodities can be made to pay. Like enterprising business folk, therefore, they are disposed to try something else, and have favorably received the representations made to them on the advisability of turning their hands to cotton growing. This, it seems, is no new industry to them, as they are stated to have grown it and woven it into cloth for centuries. Here, then, we should have hereditary aptitude. We learn that there is a rich and fertile soil awaiting cultivation, and everywhere the people seem only to await something like creditable assurance that the industry can be made remunerative to set about it in good earnest. The labor question, the professor says, does not exist; "you can get all the labor you want for 9d. (18 cents) a day;" further, "these people are farmers, and enjoy working on a farm." Such encomium as this would seem to indicate an industrial paradise. However that may be, if cotton can be grown in British West Africa in such quantity and—for this is the important point—of quality that can be adjudged worthy to take the place of the finest States import, there is undoubtedly a great future in store for the Lagos hinterland. We have heard of the possibilities of cotton growing in other parts of the African continent, but hitherto the want of fine quality has been an insuperable barrier to the manufacture of the best goods. If, by assiduous cultivation, the West African native, under British guidance, can so improve the growth of cotton in his country as to fit it for the English market, he will not only confer incalculable benefit upon his native land, but relieve Great Britain from any danger of losing one of her most thriving industries.

MARSHAL HALSTEAD, *Consul.*

BIRMINGHAM, ENGLAND, *August 24, 1903.*

IMPORTATION OF MACHINERY INTO SOUTH AFRICA.

(From United States Deputy Consul-General Hanauer, Frankfort, Germany.)

The importation of machinery into South Africa is increasing, as these figures show:

Description.	1901.	1902.	1903.
Machinery:			
Mining	$305,864	$573,526	$968,263
All other	1,337,387	2,672,631	3,166,149

The steady extension of the railroads in South Africa account for the increased importation of locomotives, which were valued in the three years at $545,315, $1,148,095, and $1,963,253, respectively.

New lines of railroad, estimated at 4,000 to 5,000 miles in length and to cost about $100,000,000 to $125,000,000, are projected. American manufacturing concerns are already in the field; thus the Pittsburg Westinghouse Company has a contract for the construction of a line of roads in the De Beers mining district. The General Electric Company, of New York, is to furnish to the railroad shops of the Natal government 119 motors, 6 dynamos of 300 horsepower each, 3 electrical cranes, and other appliances. Another United States firm has received an order for 7 locomotives for the Cape Colony railroads.

The municipal tramway of the city of Durban is being constructed by an American firm.

The London Finanz Chronik, a paper published in the interest of German financial and commercial circles, in its last issue called attention to the importance of South Africa as a market for machinery. This paper states that the importation of agricultural machinery is vastly increasing there, and that an order for 17,000 eight-horse plows has been given to three American manufacturers. An agent for an

American firm, whose office is in Johannesburg, has sent orders to the United States for the shipment of agricultural implements and machines aggregating $389,320 in value. The importation of small ironware has also increased heavily.

SIMON W. HANAUER,
Deputy Consul-General.

FRANKFORT, GERMANY, *August 17, 1903.*

FOREIGN TRADE OF GERMAN SOUTHWEST AFRICA.

(*From United States Consul-General Hughes, Coburg, Germany.*)

The German Kolonial Blatt (German Colonial Paper) publishes statistical figures regarding the foreign trade of German Southwest Africa in 1902, and adds for a comparison figures showing the traffic of that country since 1897:

Year.	Imports.	Exports.
1897	$1,163,183	$296,726
1899	2,197,995	333,076
1901	2,397,968	295,539
1902	2,039,077	526,688

The total trade of 1902 is larger than any previous year except 1901, but shows a decrease as compared with that year of $127,806. The decrease as against 1901 was caused by reduced importations, which were $358,904 less than in that year, but the exportation increased by $231,098. The largest decrease in imports was in ironware, which, from 5,279 tons, valued at $424,591, imported in 1901, fell to 1,585 tons, valued at $164,934, in 1902. The importation of tools and machinery in 1902 shows a decrease of $68,306. The decrease in the importation of these two kinds of goods finds its explanation in the fact that the construction of the railroad from Swakopmund to Windhoek and of the mole at Swakopmund have been finished. The importation of live stock also diminished considerably, viz, $90,678, and that of carriages and carts decreased by $46,172. Owing to the emigration of the Boers into German territory in 1901, the importation of live stock and farm implements was exceptionally large in that year.

Among the countries from which German Southwest Africa imports her goods, Germany takes the first place, with $1,720,502, Cape Colony, with $256,802, is next; and England, with $44,268, takes the third place.

The increase of the exports by $238,000 is due, in the first place, to the fact that after the cattle plague had been vanquished and the

Government of the Cape Colony had opened its frontiers the exportation of cattle on a large scale became possible for the first time since the foundation of the colony. Cattle to the value of $243,712 were exported in 1902, against $28,560 in 1901.

Of the total exports, $273,962 worth went to Cape Colony, principally cattle; England, which purchases all the grain produced in the colony, took $168,504 worth; while Germany, taking $84,014 worth, comes third in the list of countries to which the exports of her colony are directed.

OLIVER J. D. HUGHES,
Consul-General.

COBURG, GERMANY, *August 28, 1903.*

SOUTH AFRICAN IMPORTS.

(*From United States Deputy Consul-General Hanauer, Frankfort, Germany.*)

The Central Bureau for the Preparation of Commercial Treaties has just issued a bulletin in which attention is called to the erroneous statements published in regard to the supply sources of the goods imported by South Africa. The Central Bureau points out the following:

The Statistical Yearbook of Natal for 1901 gives the amount of roof tiles imported (4,350 pounds) as coming from England. None are credited to France, whereas it is a well-known fact that all the roof tiles used in the colony are of French manufacture.

The importation of cheese from England is put at $148,000 in value and from America at $750. It would be more correct to reverse the table. The given amount may be correct as representing cheese coming from England, but the article is an American product shipped originally to England.

Imports of cordage to the amount of 12,591 pounds is credited to England and only 128 pounds to America. This is undoubtedly an error as far as the country of original manufacture is concerned.

Furniture to the amount of 83,058 pounds is said to be imported from England and but 10,389 pounds from the United States. These figures are all the more confounding as American furniture is the leading article of every country store in the colony, and is also largely dealt in by city stores.

Import statistics of Cape Colony for the year 1900 give 5,100 pounds of typewriters from England and 3,433 pounds from the United States. Now, it is well known that most of the typewriting machines in use by the whole world are of American make, England not owning a single manufacturing plant.

The statistical tables, in order to give a correct view, should state the country of original production.

SIMON W. HANAUER,
Deputy Consul-General.

FRANKFORT, GERMANY, *August 21, 1903.*

BRICKLAYING IN WINTER.

(From United States Consul Mahin, Nottingham, England.)

The press of this country is calling attention to what is here, at least, a new method of overcoming the obstacle to building operations in winter due to frost. It is averred that in Sweden bricklaying is now carried on without interruption during the long and severe winters. It is probable that the method that makes this possible may be an old story in the United States, but I submit a description of it for what it may be worth.

It has been demonstrated that bricklaying can be carried on in a temperature as low as 16° F. For lower temperatures it is necessary to heat the sand and water used in making the mortar. The heating of the water is easily accomplished, and for the sand the common arrangement consists of a circular iron tube 18 to 24 inches in diameter and 6 to 8 feet long. This is closed at one end with bricks or an iron plate. On the top at this end there is a chimney 8 to 10 feet high and 5 to 6 inches in diameter. The fuel, which is generally refuse wood from the building under erection, is fed in at the open or partly open end of the cylinder. This cylinder is often formed of an old boiler tube or of a piece of an old iron chimney. For burning coal, special grate and chimney arrangements would be necessary, but in no case need they be elaborate or expensive. After placing this cylinder on the ground the sand is heaped on and around it to a depth of 18 to 24 inches and allowed to remain till it gets hot, when it is taken away from where it is hottest and replaced by fresh sand. The mortar should be made in a room where the temperature is kept well above freezing point and regulated according to the frost to be counteracted. Generally this room is made by roughly boarding in a part of the scaffolding, simplicity and cheapness being desirable. In laying the bricks care should be taken to avoid shifting them after once being set in the mortar, and old or stale mortar should never be used. Fifteen or twenty years ago, where this process is now employed, almost all building was broken off for four or five months during the winter. To-day it is an exception to find it hindered more than a few days or a few weeks annually.

FRANK W. MAHIN, *Consul.*

NOTTINGHAM, ENGLAND, *August 8, 1903.*

ENGINE CARS ON ENGLISH RAILWAYS.

(*From United States Consul Halstead, Birmingham, England.*)

English railways are adopting, where they can do so to advantage, many of those points of American railroad practice adaptable to English systems, and they are also endeavoring to compete with electric street-car systems which already exist in fields competitive to their own, and to forestall and prevent the building of other lines by establishing self-propelled individual passenger cars running at more frequent periods than they formerly ran trains. They are also establishing railroad stations and automobile services through country districts as feeders to their own lines. As illustrating the subject, I select a paragraph from the speech of the chairman of the Great Western Railway Company, reported in the Times:

> Having regard to the fact that the company was suffering from the competition of tram cars and also of motor cars, it had been decided to make an experiment in two directions. In the first place, they were about to establish a motor-car service, by means of a combined engine and car, between Stonehouse and Chalford, in the Stroud Valley. The cars would run on the company's lines and arrangements had been made for stopping not only at existing stations, but at intermediate points, for picking up and setting down passengers. In this way a fairly quick service would be provided for local people. The cars would be worked by steam and carry 52 persons. He thought it was an experiment of a hopeful nature. At any rate they intended to see what could be done in that way on branch lines and in certain congested parts of the country. The board had had under consideration many applications in respect of light railways, but they were doubtful as to whether there was sufficient traffic to justify the construction of such lines, and there were also cases in which private persons were running a motor-car service along the company's route. There seemed to be no reason why they should not themselves take steps to feed their railway by running motor cars, and instructions had been given for five to be purchased capable of carrying 22 persons each.
>
> The cars, which would be driven by petrol, would be built to travel at a moderate speed, and it was hoped that they would prove a convenience to the public as well as feeders to the Great Western system. In any case they would show what amount of traffic there was in a district. One advantage of motor cars was that if the traffic proved insufficient they could be moved elsewhere. The directors believed that it was an experiment which would have good results. In any event, the outlay involved was not heavy. The first service of the kind would be commenced next Monday from Helston to the Lizard.

MARSHAL HALSTEAD, *Consul.*

BIRMINGHAM, ENGLAND, *August 18, 1903.*

GERMAN COLONIES IN SOUTHERN BRAZIL.

(*From United States Consular Clerk Murphy, Frankfort, Germany.*)

The Frankfurter Zeitung on July 5, 1903, published a letter from its correspondent at Porto Alegre, Brazil, relative to the colonial enterprises in southern Brazil in which German capital is invested. The report contains the following information, which may be found of interest:

1. The Hansa Company, successor to a colonization society founded in 1848, has its seat in Hamburg. Its property consists chiefly of fertile territory in the hinterland of Doña Francisca. Doña Francisca is a German-speaking center of 30,000 souls in the northern half of the State of Santa Catharina. The growth of this colony has been slow, owing to the same small immigration which has impeded the development of all the German colonies in Brazil, the number of the Hansa's immigrants seldom exceeding 1,000 in a year.

2. It was intended that the Rio Grande Northwest Company, or, more correctly speaking, the Rio Grande Northwestern Railway Company, should penetrate in a semicircle the wilderness of the northern and northwestern part of the State of Rio Grande do Sul, near the frontier of that State, and the company secured the right to acquire the ownership of all the unoccupied lands for a distance of 15 kilometers (9 miles) on both sides of its proposed lines. Of the railway lines, only the section Tupaceretam-Sao Borja, connecting the railway system of the east with the traffic centers of the Rio Uruguay, was expected to prove profitable. The remaining sections, about 800 kilometers (480 miles) in length, intersect a wilderness, for the most part uninhabited, and extend not to but around various traffic centers. It is therefore evident that the original concessionnaires had in mind less the construction of a railway than the acquisition of an extensive tract of fertile territory, which could not have been secured if the proposal to build a railway had not been used as an argument. A clause in the concession provided that, in case the railway was not built, the lands could nevertheless be acquired by the concessionnaires, or by a colonization society formed by them for the purpose, through payment at a small fixed rate. This society was formed and now has its seat in Berlin. The most favorably located lands northeast of Sao Luiz, not far from the Rio Uruguay, have already been acquired, but the number of settlers so far secured has been small. Furthermore, there seems to be a lack of money, and, while the rumors of approaching bankruptcy are no doubt false, it is nevertheless certain that the original paid-in capital of 500,000 marks ($119,000) is insufficient for such a great enterprise. Probably efforts are now being made to attract new investments of capital.

3. Dr. Hermann Meyer's colonization enterprise includes the colony of New Wuerttemberg, in the municipality of Cruz Alta, and the colonies of Xingu, Boi Preto, and Guarita, in the municipality of Palmeira. Dr. Meyer himself resides in Germany and relegates the management of his colonial enterprise to agents. Cruz Alta is a railway station. Of all the important private colonies in Rio Grande do Sul, those of Dr. Meyer have the best location and, consequently, settlers are arriving in comparatively satisfactory numbers. These settlers are, however, chiefly old colonists or the sons of such colonists. Few immigrants are arriving directly from Germany. According to official statistics, Brazil received altogether in 1902 only 500 new German-speaking immigrants, including Germans from Austria and Switzerland. More than half of these went to Santa Catharina, while the remainder joined the State colonies in Rio Grande do Sul, where assistance is granted to them

of a kind which can not well be offered by private colonizers, such, for instance, as regular wages for road building and small allowances for the erection of houses and the clearing of forests.

4. The colonization enterprise of Messrs. Doerken & Haeusler has apparently secured, mostly for one year, the refusal of certain lands in the hinterland of the old colonies, and this territory will probably be acquired if the organization of a colonial company can be completed before the expiration of the year. The land in question, it is true, is somewhat distant from the present highways of traffic, and the old and experienced colonists and their sons are apt, in changing their homes, to avoid such regions. But if a strong German emigration to Rio Grande do Sul ever sets in, these districts can also be gradually opened and colonized.

Three circumstances operate unfavorably against the development of German colonization in southern Brazil: (1) The difficulty of securing sufficient capital; (2) the smallness of immigration from Germany; and (3) the official method of surveying and partitioning the land, which has proved very unsatisfactory.

The difficulty as to capital will no doubt be overcome so soon as one of the present companies succeeds in rapidly settling its lands and thus securing for its stockholders satisfactory profits.

The smallness of immigration results from the withdrawal by the Brazilian Government of its offer of free transportation to emigrants from Europe, a system which enabled even destitute families formerly to settle in Brazil and acquire real estate on credit. The former emigration from Germany, amounting to as much as 5,000 persons in a single year, consisted chiefly of such destitute families whose success in the Brazilian colonies was dependent upon the assistance granted to them by the State. Prosperous farmers who were unable or unwilling to engage in rough work, as well as members of the educated classes of Europe, were successfully warned against emigration to Brazil. It must be admitted that this advice was well founded, judging by the results reached under that system of colonization, a plan which attracted from Germany mostly farm hands, factory employees, and small tradesmen. Those emigrants who met with any degree of success frequently wrote to their friends at home inviting them to follow, most of the difficulty being removed for them by the offer of free transportation all the way to the chosen colony. As soon, however, as the offer of free transportation was withdrawn, in the ninth decade of the past century, the immigration of destitute and half-destitute families ceased, and, as this was the only class which had been interested in the movement, German emigration to southern Brazil at once decreased to its present limits, which are so unsatisfactory to the colonization societies.

The fundamental principle of the system formerly employed by the Brazilian Government to facilitate the settlement of its uninhabited territories by European emigrants was good, and tens of thousands of German emigrants and their descendants owe to it their relative prosperity at the present time. Not, however, until practical farmers meet with sufficient success to reward their enterprise in trying their fortunes in southern Brazil will a new impulse be given to emigration from Germany, and even then the mass of the emigrants should not be destitute families, but persons provided with considerable capital.

In this connection, it may be of interest to state that the Hamburg-American Line is now offering to German emigrants destined for the German colony "Hansa," in the State of Santa Catharina, southern Brazil, transportation to Sao Francisco for 125 marks ($29.75), which is considerably less than the rate for the much shorter trip to New York.

GEORGE H. MURPHY,

FRANKFORT, GERMANY, *August 10, 1903.* *Consular Clerk.*

BRITISH CONSULAR SERVICE.

(From United States Deputy Consul-General Hanauer, Frankfort, Germany.)

A committee officially appointed to investigate the constitution and condition of the British consular service has just submitted its report. Most of the matter making up the report and accompanying suggestions and recommendations for changes are of purely British concern and do not interest other nations. But the following declaration of said committee appeals with equal force to all other countries whose prosperity or advancement depends largely upon their export trade and the steady employment of their producing classes:

> Much of the evidence given before the committee indicates that the members of the consular service are doing good work, and their trade reports are undoubtedly of value to the commercial community. But, in view of the competition of foreign trade, which may be expected to increase, the committee considers that the interests of British trade abroad would be advanced if consuls had a business training, which would qualify them to forward and safeguard, and at the same time incline them to sympathize with, the interests of British merchants. They suggest that great advantage would result if young men trained in commercial houses for four or five years could be induced to enter the consular service.

The committee also favor competitive examination and age limit, but recommends that exceptions to these stipulations should be made in filling some of the higher consular posts, which should be left to the discretion of the appointing power.

SIMON W. HANAUER,
FRANKFORT, GERMANY, *July 31, 1903.* *Deputy Consul-General.*

COMMERCIAL ITEMS.

(From United States Deputy Consul-General Hanauer, Frankfort, Germany.)

Cables.—According to press reports the Argentine Government is about to order 50 tons of submarine telegraph cable.

Photographic articles.—German manufacturers of photographic articles are successfully exploiting the Chinese market, as amateur photography is becoming popular in China.

Persian trade.—Russia is gradually crowding England out of the Persian markets. In 1889 the trade between England and her East

Indian possessions and Persia aggregated $15,000,000; in 1899 it amounted to less than $10,000,000, while Russia's trade with Persia reached $22,000,000, a gain of 125 per cent since 1889. The imports of British textiles into Persia during the first eight months of 1902 were valued at $2,100,000, whereas in the same period of 1901 they were $3,500,000.

SIMON W. HANAUER,
FRANKFORT, GERMANY, *July 28, 1903.* *Deputy Consul-General.*

TEA INDUSTRY OF INDIA.

(*From United States Consul-General Patterson, Calcutta, India.*)

AREA UNDER TEA.

The area under tea in India at the end of 1902 was 525,252 acres, nearly two-thirds being in the valleys of the Brahmaputra and Surma, which contain as much as 339,640 acres. In Bengal the area under tea was 135,158 acres, or about 25 per cent of the whole. Its cultivation is therefore to the extent of nine-tenths in the two Provinces of Assam and Bengal, the other tenth being divided between northern and southern India.

The area added to tea growing during the last five years was about 55,000 acres. Under the discouragement of low prices of tea, caused by placing on the markets more than their consuming capacity, endeavors have been made to restrict the cultivation and production and to supply a better quality in smaller quantity, so that the addition to the tea area in the last two years was only about 2,000 acres, considerable areas on which tea could not be grown with profit, at the present range of prices, having been abandoned.

From Assam reports were received from 805 estates for the year 1902, with an area of 339,640 acres, the average area of an estate being about 420 acres. In Bengal 300 acres was the average for 452 estates and in Travancore the average for 75 estates was 337 acres. In other localities the average of the estates is much smaller. These figures only refer to tea-bearing acres.

While the area has increased since 1885 by 85 per cent, the increase in production has been 167.7 per cent.

PRODUCTION OF TEA.

The actual production in 1902 is reported to have been about 190,000,000 pounds, which is 56 per cent larger than the reported production of ten years previously, in 1892. The average of the last five years—the yield of tea to the acre—dividing the total yield by the area of land bearing mature plants, has been as follows:

	Pounds.
Assam:	
Brahmaputra Valley	383
Surma Valley	478
Bengal:	
Duars	488
Darjeeling	278

According to the published accounts, the paid-up capital of the joint-stock companies engaged in the production of tea approximates $52,000,000. About 88 per cent of the capital belongs to shareholders in companies whose head offices are in London. Divided into the area actually under tea, the capital stands at about $100 per acre.

NUMBER OF PERSONS EMPLOYED IN THE TEA INDUSTRY.

The number of persons employed in the tea industry in 1902 is returned at 606,830 permanently and 90,940 temporarily, which works out to about 1.33 persons to the acre.

TEA EXPORTS.

The tea produced in India is exported mainly to the United Kingdom, to the extent of nearly 97 per cent of the product. The United States took, in 1902, 2,672,000 pounds and Canada 5,554,000 pounds, exported direct, or nearly double that of the previous year; but a large quantity of Indian tea was probably transshipped to both countries from the United Kingdom.

QUANTITIES AND PRICES.

The production of tea in India and Ceylon has increased so much more rapidly than the consumption that there has been a heavy fall in price, and the tea industry in 1901 passed through a critical period, but now the prospects are brighter.

The Indian tea is much stronger than the China tea, and it is claimed that if 1 pound of China tea will produce 5 gallons of liquid tea of a certain flavor and color 1 pound of Indian tea will produce 7½ gallons of a similar beverage.

The average price per pound of Indian teas in Calcutta were as follows during the last two years:

Description.	1901-2.	1902-3.
	Cents.	*Cents.*
Assam Valley	12.25	12.08
Surma Valley	9.25	9
Darjeeling	15	14
Duars	11	12

EXHIBIT AT ST. LOUIS FAIR.

The Indian Tea Association of Calcutta will have a pavilion at the St. Louis World's Fair in 1904, where they will have a large exhibit of Indian teas, and I have no doubt that when their excellent qualities are brought more to the notice of our people, in comparison with other teas, a much larger demand will be created for them in the United States.

R. F. PATTERSON,
Consul-General.

CALCUTTA, INDIA, *July 21, 1903.*

IMPORTS OF TEA INTO THE UNITED STATES.

The following table, prepared in the Bureau of Statistics, Department of Commerce and Labor, shows the total imports of the United States of tea from all countries for the year 1902:

Country.	Quantity.	Value.
	Pounds.	
Europe	3,747,940	$706,958
North America (Canada)	1,839,199	321,916
Asia	69,991,961	8,361,241
Oceania	25	13
Total	75,579,125	9,390,128

Of the 69,991,961 pounds imported from Asia, 35,989,945 pounds came from the Chinese Empire, 30,767,745 pounds from Japan, and 2,895,671 pounds from British India. To the latter might be added a large portion of the 1,839,199 pounds imported from Canada.

TEA CULTIVATION AND CURING IN INDIA.

(*From United States Vice and Deputy Consul-General Osgood, Calcutta, India.*)

Tea is cultivated in India on well-cared-for tracts of level or mountainous land. The term "gardens" is given to these tracts, which vary in size from 100 acres in the hill districts of the lower Himalaya Mountains to 1,500 acres on the plains.

PLANTING.

The tea bush is raised from seed, which is now carefully planted about 1 inch deep in a nursery of soft, fertile soil. In the early days of tea planting the seed was sometimes scattered broadcast from the back of an elephant. The young plants require a rich soil and a very moist heat in order to thrive well. When the plants have obtained a height of 12 inches they are transplanted. It is generally considered that a bush requires about 16 square feet of well-cultivated soil around it to gain the best results. The tea is planted in regular rows, either in squares or triangles. The triangular planting, while giving each bush exactly the same space from its neighbor, effects a saving of nearly 15 per cent space, as it is possible to plant 115 bushes in the same area that would be occupied by 100 plants in rectangular planting.

PRUNING.

By the third year the plants should be from 4 to 5 feet high, and they are then pruned down to about 20 inches, so as to promote the growth of new branches and tender shoots and thus produce a larger number of new leaves. The methods of pruning vary greatly and in some cases the plants are pruned before they are taken from the nursery. The bush is so pruned and trained that instead of growing tall it is kept short and broad in order to furnish a greater plucking surface.

When the young bushes have developed succulent shoots upon which there are four or five leaves they are said to have produced their "first flush"—that is, they have sprouted sufficiently to pluck. During the rains successive "flushes" occur at intervals within fifteen to twenty days, varying according to the soil, cultivation, and climate.

PLUCKING.

The top part of the shoot is the only portion that is plucked. It includes the bud and the first two or three leaves, according as fine, medium, or coarse tea is wanted, for tea can only be made from the young and tender leaves, and the younger and tenderer the leaf the better the quality of the tea.

Plucking is performed by turning the thumb downward and nipping off the shoot between the thumb nail and the forefinger. It is done almost entirely by women and children, as it is comparatively easy work and does not require any physical strength. Each plucker carries a large open-mouth bamboo basket about 2 feet in diameter and 3 feet in length, tapering toward a rounded bottom. The leaf is thrown into this basket and protected by a covering from the rays of the sun, which would otherwise heat the tender leaf and cause it to turn red. Late in the afternoon the leaf is brought to the factory, where it is carefully weighed and examined by the manager and his assistants and the several amounts entered in a book against each plucker's name. To earn a full day's pay a certain number of pounds of leaf must be brought in. This amount is determined beforehand by the manager and varies, as it depends upon the condition of the flush. Extra pay is given for whatever quantity is brought above the required amount of the day, and in this way many good workers earn double pay during the height of the season. The rate of pay for the extra work is always relatively higher than the regular wages in order to offer an inducement for hard work.

WITHERING.

When the leaf has been weighed it is taken to the withering rooms, where it is thinly and evenly spread upon wide trays arranged in tiers from 6 inches to 2 feet apart, one above the other. This work is performed by men, who, with wonderful dexterity and rapidity, spread the leaf over the trays, making 1 pound of the green leaf when properly spread cover about 1 square yard.

ROLLING.

By morning the leaf is sufficiently withered to be rolled without being broken. This is the test of withering, for a fresh stalk will break if bent only a little, while a stalk of withered leaf can be bent double without snapping.

The leaf when thoroughly withered is gathered off the trays and carried in baskets to the rolling machine. The object of rolling the leaf is to liberate the juices of the leaf cells and to give it a twist or roll. During the operation of rolling, the leaf changes color slightly, turning from a verdant green to a slightly yellowish color. The leaf is rolled for about thirty minutes at a time.

In former days this rolling process was all performed by hand, and even at the present time it is so conducted in China. A good day's work for one man was about 80 pounds of rolled leaf, but with the ingenious rolling machines that are now used in all Indian tea factories it is possible to roll two or three times that amount in one hour.

FERMENTING.

The rolled leaf is then taken to a cool, dark, moist room, where it is spread out on a cement floor or in long trays and covered with wet cloth. It is left to ferment or oxidize, which turns the leaf to a dull, rusty color. This fermentation is the most important process in the preparation of the tea leaf, for it is necessary to have the leaf reach just the right point of fermentation, or else the flavor and appearance will be greatly changed. There is no general rule for the length of time that this operation requires. The leaf of one garden may take six hours of fermentation while that of another garden may not stand more than two hours.

After the process of fermentation is considered to have proceeded far enough, the leaf receives another rolling of a few minutes and is then placed in the firing machine, where the fermentation is instantly stopped and all the moisture of the leaf removed. In the first firing the leaf is subjected to a blast of hot air—between 240° and 300°—for twenty minutes, which causes it to curl up and blacken. It comes out of the machine about three-fourths fired, and is then fired a second time at a much lower temperature. It is now dry and crisp, with a delicious aroma, and is the tea of commerce.

SORTING.

The leaf is then taken to the sorting room, where it is weighed and the amounts entered in a book, so that at the end of the day the amount of manufactured leaf can be compared with the amount of green leaf from which it was made. It is usually estimated that about three-fourths of the weight of the green leaf is lost during the process of manufacture.

After weighing the tea it is emptied on a cement floor, where women carefully pick out any foreign matter, such as little sticks and pieces of stone, which somehow find their way into the mass of tea. When it has been properly inspected it is ready to be sorted into the different grades which are sold in the market. This is done by means of a long sieve, which is operated by power, in which are wire meshes of different sizes. The rough tea is put into a hopper at one end and the sieve is moved backward and forward at a rapid rate, causing the tea to gradually work its way to the other end. The tea that drops through the different meshes is called "unbroken tea," which is the finest grade, as it is made up of the tip of the bud and the delicate part of the leaf. Such tea as is unable to find its way through the meshes traverses the entire length of the sieve and falls into large baskets. It is placed in a machine where it is broken up fine, and then this broken tea is again sifted and automatically sorted in various grades in the same manner.

The names given to the different qualities are as follows: The unbroken teas are divided into Flowery Orange Pekoe, Orange Pekoe, Pekoe, and Pekoe Souchong. The broken teas include Broken Orange Pekoe, Broken Pekoe Souchong, Broken Pekoe, Fannings, and Dust.

The division into these classes is not uniform among the different tea gardens, and as the names given to the various grades are more or less optional, some confusion arises when attempts at comparison are made.

PACKING.

Just before the tea is to be packed into chests it is refired for a very short time in order to drive off any moisture that may have been absorbed from the atmosphere during the time it has been away from the drying machine.

The amount of tea packed in a chest is usually 100 pounds, but as some teas are much finer than others it is possible to pack much more tea, bulk for bulk, of one kind than of another. Machines are now employed to pack the chests by which 20 to 25 chests can be packed in an hour. After being packed in lead-lined chests and hermetically sealed, the garden mark, the name of the tea, and the consecutive numbers of the shipment are placed on the cover. The tea is then ready for shipment.

ERVIN E. OSGOOD,
Vice and Deputy Consul-General.

CALCUTTA, INDIA, *July 21, 1903.*

NEW GERMAN CUSTOMS TARIFF.

(*From United States Consul Langer, Solingen, Germany.*)

The future handling of the new German customs tariff will place more responsibility on the importer than heretofore. The law provides that every importer must make an exact and specific declaration as to the goods to be imported, which will be strictly enforced. The only exception is made when the importer asserts that he is unable to make a reliable declaration, in which case, however, the clearing of such goods is delayed and any inspection on probation excluded.

The changes as to the new tariff consist chiefly in tariff rates themselves and the official invoice appertaining thereto. These being more specialized than heretofore will necessitate a more detailed declaration as well, particularly as to textiles, hardware, machinery, etc. For instance, as to tin, the thickness must be given; in machinery, the kind must be specified and the weight of each machine given; in cotton goods, thread and relative weight must be specified This will not only simplify the official inspection, but facilitate it as well.

In the case of goods subject to various rates of tariff according to the country of origin, the importer must state the country of origin in his declaration, and while, as a rule, this would take the place of further evidence as to the origin of the goods, the customs authorities may demand specific evidence in doubtful cases.

JOSEPH J. LANGER, *Consul.*

SOLINGEN, GERMANY, *August 10, 1903.*

INCREASED FRENCH DUTIES ON CATTLE AND MEATS.

(*From United States Consul Thackara, Havre, France.*)

The bill increasing the duties on cattle, hogs, and other animals and on dried and salted meats, which was passed during the last days of the recent Parliament, was signed by the President of the French Republic on July 31 last, promulgated in the Journal Officiel of August 11, 1903, and is now in force.

Under the old customs law there was but one tariff for all the animals and products mentioned in the new act, with the exception of salted beef, while under the present régime not only have maximum and minimum tariffs been established, but duties have been greatly increased. In the following table are given the details of the new customs law, together with a comparison between the old and the new duties:

Comparison between old and new duties on cattle, meats, etc.

Article.	New tariff law.				Old tariff law.	
	Maximum.	Increase.	Minimum.	Increase.	Maximum.	Minimum.
Steers.....per 220.46 pounds live weight...	$5.79	$3.86	$3.86	$1.93	$1.93	$1.93
Cows .....do.....	5.79	3.86	3.86	1.93	1.93	1.93
Bulls .....do.....	5.79	3.86	3.86	1.93	1.93	1.93
Young bulls and heifers.....do.....	5.79	3.86	3.86	1.93	1.93	1.93
Calves .....do.....	7.72	5.40	4.825	2.505	2.32	2.32
Sheep .....do.....	7.72	4.73	4.825	1.835	2.99	2.99
Lambs, weighing 22 pounds and under..per head...	.772	.483	.434	.145	.289	.289
Goats .....do.....	.868	.483	.579	.193	.386	.386
Kids .....do.....	.386	.193	.289	.096	.193	.193
Hogs.....per 220.46 pounds live weight...	4.825	3.285	2.895	1.355	1.54	1.54
Sucking pigs, weighing 33 pounds and under, per head.....	.772	.483	.434	.145	.289	.289
Fresh meats:						
Mutton.....per 220.46 pounds...	9.65	3.48	6.755	.585	6.17	6.17
Pork .....do.....	7.72	5.40	4.825	2.505	2.32	2.32
Beef .....do.....	9.65	4.825	6.755	1.93	4.825	4.825
Salted meats:						
Pork, ham, bacon, etc.....do.....	9.65	4.825	5.79	.965	4.825	4.825
Beef and other.....do.....	9.65	3.86	5.79	.58	5.79	5.21

After the passage of the law the Chamber of Commerce of Havre, through its president, asked the Minister of Commerce if cattle and meats—especially salted meats of American origin—could be allowed to enter France on payment of the minimum tariff, the same as lard and its compounds and manufactured meat (charcuterie).

The later products enjoy the benefits of the minimum tariff in accordance with the reciprocity agreement which was entered into by France and the United States May 30, 1898.

The minister, in his reply, said that although by the terms of the law of April 5, 1898, the French Government, by decree, was able to apply the minimum tariff to lard and manufactured meat coming from the United States, there was no provision in the new law by which the minimum tariff could be applied to any of the products enumerated in that measure.

Hereafter, cattle, sheep, goats, hogs, etc., and fresh and salted meats produced from the same will be subjected to the maximum tariff if imported into France direct from the United States, or if imported indirect through a European country there will be an additional tax of 3.60 francs (69.5 cents) per 100 kilograms (220.46 pounds).

The American cattle and fresh-meat trade with France is practically nil, due, in great part, to the rigid sanitary measures prescribed by the French Government for the inspection of cattle and fresh meats imported into France. The trade also in American salted, pickled, and cured meats with France has been progressively declining for a number of years past on account of the heavy duties imposed on these products by the French customs law and the high prices which have been prevailing in the United States. The falling off in the salted-meat trade is shown in the following table, in which are given the weights and values of the exports of salted beef and hog products from the United States for the past three years:

Exports of beef and hog products from the United States to France during the years 1900, 1901, and 1902.

Description.	1900.		1901.		1902.	
	Weight.	Value.	Weight.	Value.	Weight.	Value.
	Pounds.		*Pounds.*		*Pounds.*	
Canned beef	1,175,776	$118,842	674,588	$67,443	592,000	$60,015
Salted, pickled, and cured beef	559,100	31,913	148,890	7,697	101,000	6,590
Bacon	7,464,961	494,066	1,960,196	155,969	282,884	27,236
Ham	1,754,585	174,118	320,856	31,454	138,592	14,676
Pork, fresh and salted	111,725	6,771	91,800	7,295	46,000	4,621

The prices of American salted meats having fallen during the past three or four months, some business has been done in these products in the French markets; but the new law will tend to greatly restrict the trade, if not to do away with it altogether.

A. M. THACKARA, *Consul.*

HAVRE, FRANCE, *August 12, 1903.*

NOTES.

Locomotives for Mexico.—Under date of August 5, 1903, Consul Horace L. Worcester, of Saltillo, reports that the motive power of the Coahuila and Pacific Railroad is somewhat impaired and that doubtless several new locomotives will be needed shortly.

Biscuit Factory in Barbados.—Consul Macallister, writing from Barbados under date of August 25, 1903, reports the establishment of a large biscuit factory at Barbados. It is expected to cut off the importation of biscuits from the United States, which amounted to about 3,842,360 pounds per annum, valued at from $120,000 to $125,000. Flour from the United States, at least to a certain extent, will take the place of the biscuits.

New Nile Bridges.—Three bridges over the Nile are to be constructed. Proposals and bids for the same are to be sent in by February 1, 1904, to the ministry of public works at Cairo, Egypt. Specifications may be obtained by addressing the Commercial Information Bureau of the British Board of Trade, 50 Parliament street, London, S. W.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 11, 1903.*

Wire Netting Needed in Portugal.—United States Minister Charles P. Bryan, under date of Lisbon, August 26, 1903, reports to the Department, for the benefit of the manufacturers in interest, that Portugal seems to offer an excellent market for doors and window sashes of wire netting, which are unknown in that country. The swarming here of flies, mosquitoes, and other insects nine months of the year would appear to make the demand for such protection universal.

American Fruit in Germany.—The imports of dried, baked, and boiled fruit into Germany for the first half of the present year amounted to 34,070 metric tons (of 2,204.6 pounds each), against 17,757 and 20,067 metric tons, respectively, for the corresponding periods of 1902 and 1901. Of this amount the United States furnished 22,725 metric tons in 1903, against 9,599 and 9,937 metric tons, respectively, in 1902 and 1901. The United States therefore supplied about 67 per cent of the total imports of such fruit during the first half of this year.—*Richard Guenther, Consul-General, Frankfort, Germany, September 3, 1903.*

American Goods in Quebec.—The sale of American goods is increasing in this part of Canada. Many concerns have traveling men covering the territory with good results. The sales of farming machinery and boots and shoes have been constantly gaining. The demand for American farming machinery has grown to such an extent that some American manufacturers are now building factories in Canada to make their goods here. Where bright and energetic traveling men have been employed to sell American goods, sales have generally been made even if the price of the goods was somewhat higher than similar goods of Canadian manufacture, and this is especially true of the two classes of goods above mentioned.—*Paul Lang, Consul, Sherbrooke, Canada, September 24, 1903.*

American Capital in Canada.—A large pulp mill has recently been built at Brampton Falls, Quebec, 6 miles from Sherbrooke, at a cost of nearly $500,000 and is now in full operation and shipping its product to the United States. The capital to build and equip this plant came from the United States. This company will soon erect a paper mill at a cost of $300,000 to be operated in conjunction with the pulp mill. American capital is rapidly invading this part of the Dominion, and the near future will see the erection and equipment of many large manufacturing plants, which will greatly increase the wealth and business of this section and promote trade with the United States. American companies are now building factories in Canada and manufacturing the same goods that they turn out in the United States, thereby saving the Canadian duty and freight rates, which enables them to sell their goods at about the same prices as they obtain for them in the United States.—*Paul Lang, Consul, Sherbrooke, Canada, September 24, 1903.*

American Products in Fayal, Azores.—Consular Agent Moyses Benarus, under date of June 30, 1903, transmits the following statement showing the values of the products imported at Fayal from the United States during the fiscal year ended June 30, 1903:

Article.	Value.	Article.	Value.
Silk, woolen, and cotton goods	$10,178.00	Chemical products	$297.08
Timber and lumber	19,000.00	Blacking	217.00
Spars	500.00	Tobacco	60.10
Staves	364.00	Beer	455.00
Petroleum	1,733.11	Tea	285.09
Hardware, copper, iron, and zinc	1,644.17	Codfish	98.08
Machinery and agricultural implements	4,606.80	Cordage	2,225.06
Bicycles	247.12	Miscellaneous merchandise	3,463.05
Watches	339.11	Total	45,712.77

English vs. American Coal.—The question of keeping up a supply for the increasing demand for English coal has become a matter of deep concern for Great Britain's economical circles. A royal commission has been appointed to investigate the subject. A German journal, in reviewing this matter, says:

> The difficulties encountered by British coal miners in being obliged to operate 3,000 to 4,000 feet below the surface and the enhanced cost attending deep-level mining will enable the coal exporters of the United States to supplant the English product in foreign markets.

What we require in order to obtain control of the coal trade of the world are transportation lines and new business connections which will secure return freights for our coal ships.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 24, 1903.*

German Locomotives.—Under date of September 9, 1903, Consul-General O. J. D. Hughes, of Coburg, Germany, writes:

So much has been said against American locomotives and their builders by the German press that it is rather refreshing to read the following from the Transport, which shows the total failure of the German locomotive makers to fulfill their contracts:

> The reasons put forward by Indian railway companies for giving locomotive orders to German instead of English builders was quicker delivery and saving in cost. The latter is considered a relative term and the truth of it can not be tested until the foreign locomotives have been at work. The other reason has proved to be fallacious. In September, 1901, the East Indian Railway ordered 40 engines from a German firm, which were to have been delivered in August, 1902, on the ground that thirty-nine weeks and £30,000 ($145,995) would be saved. The fact is that up to the middle of October none had been delivered at all, and completion of the contract is not expected until the end of the year. A while ago the Assam-Bengal Railway ordered 10 engines from Germany to be delivered in April, 1902, but not one of them has yet been delivered; nor were the 22 German engines ordered by the Bombay, Baroda, and Central India Railway delivered within the forty-two weeks promised.

Combine against American Petroleum.—German press accounts announce that a powerful combine, composed of leading German banking institutions—among these the "Deutsche Bank" and the firm S. Bleichroeder, in Berlin—has formed close connection with Roumanian oil companies having large oil territories, now to be worked by means of the capitalistic power furnished by the German banks. It is intended to open the German markets for the Roumanian oil and to unite with oil companies in Galicia, so as to break into the market which the Standard Oil Company and American oil have gained in Germany. The press accounts give the following statistical figures: American oil imported by Germany in 1902, 1,006,829 metric tons, valued at 71,600,000 marks ($17,040,080), against 193,532 tons, valued at 11,700,000 marks ($2,784,600) imported from Russia, Roumania, and Galicia (Austria). While the imports from the United States show only an increase of 50,000 tons for the year 1902, as compared with 1898, those from the three countries last mentioned gained 110,000 tons in the same time.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, September 10, 1903.*

Another Alleged New Metal.—German papers state that the French press publishes news with reference to a new metal, which is said to be based upon an interview which a representative of the Patrie had with Mr. Edward Mollard, of London. The new metal is called "solium" and is said to possess a very light specific weight and excellent resistance. It is as hard as steel and of the color and brilliancy of silver. The main component part is salt (by which is perhaps meant that it is manufactured from salt—*i. e.*, chloride of sodium—so that the metal sodium may be the chief component part). It is said to be especially suitable for ship armor plate, as it does not rust and is more resistant than the armor plates now in use. It is also alleged of solium that through it radium can be manufactured in liquid state at $5 per quart.—*Richard Guenther, Consul-General, Frankfort, Germany, September 5, 1903.*

Discharging Arrangement for Open-Hearth Furnaces.—In order to enable open-hearth steel furnaces to be partially discharged to a greater or less extent, a German inventor provides several tapping holes, or channels, at different levels in open pockets projecting from the wall of the furnace. The process may thus be carried on continuously in a stationary furnace, the amount of the charge withdrawn being replaced by fresh molten pig iron and ore. Slag-discharging channels are provided to draw from a higher level.

The whole of the contents of the furnace may be withdrawn whenever required through a tapping hole in the bottom. The pockets are normally open through the wall of the furnace, but communication with the interior of the furnace is cut off when required by lowering a sliding door. The tapping and slag-discharge channels are closed by blocks, which can be raised by levers. The various channels are suitably packed during the working of the furnace.—*Oliver J. D. Hughes, Consul-General, Coburg, Germany, September 8, 1903.*

Loom Shuttles in Northern France.—I am asked by Mr. E. Levillain, 4bis. Rue de Florence, this city, if there is any important manufacturer of shuttles for looms who would like to be represented in Normandy. Mr. Levillain assures me he can furnish the very best references, and that he visits the most important houses of this district, as well as those of Roubaix, Paris, Lille, and other cities. Communications may be addressed direct to him.—*Thornwell Haynes, Consul, Rouen, France, August 15, 1903.*

A New Saccharine Plant.—The Technical Review of Berlin states that a plant has recently been found in South America which contains a considerable quantity of saccharine matter, is not fermentable, and possesses an unusually strong saccharine taste. The plant is of the same species as the German Kunigundenkraut (*Eupatorium cannabinum*), is herbaceous, and is from 8 to 12 inches high. The chemist Bertoni considers this plant as of highly important value from an industrial standpoint on account of its natural sugar properties, which are of a high percentage. Its scientific name is *Eupatorium rebandium.* According to experiments made by the discoverer, the director of the Agricultural Institute at Asuncion, this interesting plant is said to yield a sugar which is from twenty to thirty times as sweet as ordinary cane or beet sugar.—*Richard Guenther, Consul-General, Frankfort, Germany, August 12, 1903.*

New Paper and Wall Coating.—A new German composition for coating or impregnating pasteboard and similar material for roofing and other purposes, also applicable for coating the walls of buildings, etc., consists of a combination of resins and fats which are practically nonsaponifiable, such, for instance, as the cholesterin fats, the composition being applied in a molten condition or dissolved in a highly volatile liquid, such as benzine, turpentine, etc. Linseed oil, carnauba wax, and magnesium oxychloride are added to the mixture. In a recipe given, the following proportions are recommended: Sixty parts of colophony, 25 of neutral yolk, and 5 each of carnauba wax, linseed oil, and magnesium oxychloride. The material under treatment is immersed for about ten minutes in the fused composition and passed through heated rollers.—*Oliver J. D. Hughes, Consul-General, Coburg, Germany, August 22, 1903.*

The Cotton Crisis in Lancashire.—The German consul-general at London reports that, owing to the high price of cotton, about 30,000 looms and 1,500,000 spindles are now idle in Lancashire, and the production of cotton textiles there has diminished by about 1,500,000 yards per week. It is believed that many of the smaller manufacturers will succumb to the crisis.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 15, 1903*

Cotton Growing in Russia.—According to the New Lodzer Zeitung, the 1902 central Asian cotton crop is below the one of 1901 by about 10 per cent. The chief sufferers have been the plantations sown with American seed. These produced 32.5 per cent less than the preceding year, while those planted with local seed produced 32.2 per cent more. With regard to area under cotton at the present time there is a decrease amounting to 18.8 per cent. The latter decrease is 33 per cent in the Fergana, Sir Darya, and Tashkend districts, while the area under cotton has increased by 25 per cent in the Khanate of Khiva and by 16 per cent in Bokhara. A serious drawback to the development of Russian cotton growing is the inadequate credit at the disposal of the planter. For the most part he is compelled to sell his future crop on the root, and having no further interest in fluctuations of the price, becomes lax in his attendance. To put a stop to this evil the Government intends to create agricultural loan offices and, further, to construct irrigation plants, to supply good seed, to improve the means of communication, to start additional experimental plantations, and, last but not least, to revise the duties on cotton, wool, and fabrics, all in order to develop cotton growing so as to make the Russian industry independent of the American supply.—*Oliver J. D. Hughes, Consul-General, Coburg, Germany, September 8, 1903.*

German Cotton Spinners' Supplies.—Reports from the lower Rhein cotton spinning and weaving centers show that the advance in the raw-cotton markets has been only partially followed by yarn prices, and every upward movement of the former has increased the tension, to the disadvantage of the spinning industry. Business in cotton yarns has become increasingly difficult with each succeeding week, and users are adopting a more and more reserved attitude and are noticeably refraining from giving out their usual contracts. In many mills yarn supplies are being exhausted, but in others it is hoped that by carefully husbanding the balances on hand the difficult interval may be got over without manufacturers being compelled to pay current high prices for yarns. As regards those spinners who did not secure ample supplies of the raw material early in the season, they have no alternative but the reduction of their yarn output; attention is, however, called to the fact that the German spinners are generally believed to be better supplied as a rule with cotton than the English spinners, so that a simultaneous and general curtailment of production is not to be expected, least of all in the West German cotton-spinning districts.—*Oliver J. D. Hughes, Consul-General, Coburg, Germany, September 3, 1903.*

Macadam Streets and Telephone Line in Saltillo.—The authorities at Saltillo have purchased a new steam road roller and contemplate constructing some macadam roads. The problem is quite a difficult one, as Saltillo lies in a valley surrounded by high mountains almost devoid of trees, vegetation, or anything to hold the water, which, when it rains, decends with great velocity, flooding the streets. All of the roof water is conducted to the streets and at present is carried away on the surface. To build a street that will withstand the action of the water and conduct the great quantity safely away is one of the problems confronting the city engineers at the present time.

It is rumored that another telephone line is to be constructed in Saltillo.—*Horace L. Worcester, Consul, Saltillo, Mexico, August 24, 1903.*

Fine Woods, Rubber, and Gums in Mexico.—Consul W. W. Canada, of Veracruz, Mexico, says that the Mexican Government has granted a concession to Señors O. Molina y Cia , Sucesores, authorizing them to cut mahogany, cedar, dyewoods, and timber for building purposes; also to gather and extract rubber and other resinous substances in a part of the newly opened territory of Quintana Roo, the lands having a superficial area of 328,000 hectares (810,488 acres). The limits of the territory are defined in the concession, which is to remain in force for ten years. The concessionnaire pays to the Government in return for the privilege:

For each cedar or mahogany tree to be cut		$1.50
For each tree cut for building purposes		.50
For each ton of firewood cut		1.00
For all dyewoods	per ton	2.00
For all chicle gathered	do	18.00
For all rubber gathered	do	24.00
Yearly for each 2.471 acres (1 hectare) under cultivation		1.00
Annually for all cattle grazing on the land	per head	.50
For each 2.471 acres of the lands under this concession		.10

The Government requires a deposit of $3,000 as a guaranty of good faith, and the concession shall be declared null and void if for no good and sufficient reason work shall cease for the term of six months. Similar concessions have been granted since the opening of this new territory.

German-Egyptian Trade.—In his annual report the Austro-Hungarian consul at Alexandria writes of the growing trade of Germany with Egypt, largely due to the direct shipping facilities by the German-Levant Steamship Line. German exporters receive bills of lading at any railroad point in Germany on consignments for any port in levantine countries. The freight rates of this line are also lower than those of the Austrian lines. In consequence thereof many Austrian export firms in Bohemia now ship via Hamburg instead of by Trieste, when expediting consignments for Mediterranean countries. The consul also states that articles of German manufacture are now sold in Egypt which were formerly supplied by other countries.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 15, 1903.*

German Exports to South America.—According to official returns, the exports from Germany to South American countries in 1902 were as follows:

Argentine Republic	$11,236,600
Brazil	10,454,400
Chile	7,687,400
Paraguay	107,576
Peru	2,165,800
Uruguay	2,808,400
Total	34,460,176

Germany's exports to these countries consist mainly of textiles, ironware and machinery, guns and ammunition, leather articles, glass, porcelain, and earthen ware, fancy goods, cutlery and notions, and beer.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 11, 1903.*

Emigration via Hamburg and Bremen.—The emigrants via Hamburg and Bremen during the seven months ended July 31, 1903, numbered 205,168, against 170,932 during the same period of 1902. About 90 per cent of this exodus goes to the United States. Germany furnished but a small part to this contingent, the bulk coming from Bohemia, Hungary, Roumania, and Russia.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 11, 1903.*

Hazelnuts in Europe.—Germany and other European countries import annually large quantities of hazelnuts, which are used by confectioners and form a prominent item of the dessert at hotel and private tables. Besides this they are as popular an article of consumption as peanuts are in the United States. The hazelnut bushes require no attention and will grow almost anywhere; yet the nut can be greatly improved by proper cultivation. The children of our American farmers might add to their savings by planting hazelnuts. If nut raising were to be conducted on a large scale by our fruit growers, hazelnuts would soon become a valuable item of our export trade.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 31, 1903.*

Commercial Duties of German Consuls.—The Commercial Diet of Germany, which is the central board of all German chambers of commerce, has applied to the Imperial Chancellor for a list of those German consulates which would furnish commercial information, credit rating of business firms, etc. In his reply, the chancellor stated that though all the German consuls are instructed to name the firms in their districts with whom it might be desirable to form business connections, and to furnish all other proper information, yet no general instructions can be issued to require consuls to give an opinion on the credit rating or responsibility of firms doing business in their districts. It must be left to the judgment of each consul whether he deems it in conformity with his duty to furnish information of this kind to German inquirers; therefore no such list as asked for by the commercial diet can be supplied.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, September 17, 1903.*

German Machine Building for Foreign Markets.—United States Consul-General O. J. D. Hughes, of Coburg, Germany, in his annual report for the fiscal year ended June 30, 1903, writes as follows concerning the conditions under which German machine builders hold their place in foreign markets:

For many years German locomotive builders have had an office in Warsaw, but the news comes that it has now been closed in consequence of a lack of orders, this lack arising through instructions on the part of the Russian Ministry of Traffic that State as well as private railways must draw their supplies from Russian factories. In a speech at St. Petersburg last spring M. de Witte stated that the Government would take measures to assist the home iron industry. M. de Witte also said that "only an independent industry standing on its own feet and understanding how to accommodate itself to the needs of the country was able to live."

The annual report of the Cassel Chamber of Commerce contains some interesting and significant passages, among others the following:

> Although home orders in 1902 were about a third fewer than in the year 1901, yet the firm of H—— & Son (engine builders) succeeded in avoiding material limitation of labor by accepting orders from abroad at prices which did not cover the costs of production.

The firm in question built for Egypt, Italy, Denmark, Holland, and Servia and took orders for 2,000,000 marks' ($476,000) worth of work at prices that left absolutely no profit. Doubtless other German engine-building firms did business abroad on the same terms.

The Cassel chamber further observes:

> The possibility of foreign markets becomes more and more limited, owing to the customs isolation of other countries, which is on the increase. The new tariffs of Russia and Austria impose such duties on locomotives as to render importation almost if not quite impossible. In times of weak home demand, such as prevailed in 1902, the highly developed German locomotive-building industry can not, however, do without foreign orders if it is to live.

Alcoholic Liquors in German Africa.—During the year 1902 the shipments of spirituous liquors (rum, brandy, whisky, etc.) from the port of Hamburg to the German colonies of East and West Africa amounted to 4,128,747 gallons, an increase of 631,752 gallons over the exports of the preceding year. It appears that spirituous liquors form the chief export from Germany to her African colonies.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 15, 1903.*

British Exports to South and West Africa.—United States Consul Frank D. Hill, Amsterdam, Netherlands, under date of September 3, 1903, reports that the London Standard of August 11, 1903, contains the following:

> Mr. Chamberlain, replying to a printed question of Mr. W. Thomson, said that he could not undertake to say to what extent the increases in the exports to the colonies are due to the wars in South Africa, Nigeria, and elsewhere, but it may interest the honorable member to know that the value of the exports of the produce and manufactures of the United Kingdom to the South and West African colonies, respectively, for the last five years have been as follows:

Year.	South Africa.		West Africa.	
1898	£12,199,810	$59,370,375.86	£1,999,445	$9,730,209.09
1899	11,370,125	55,332,713.31	2,116,080	10,297,903.32
1900	12,757,875	62,086,198.68	2,148,149	10,453,967.10
1901	17,154,380	83,481,790.27	2,347,319	11,423,227.91
1902	24,436,739	118,921,390.34	2,737,486	13,321,975.61

Foreign Trade of Egypt.—During the first sixth months of 1903 the imports of Egypt amounted to $37,364,045 and the exports to $43,986,655.

The following articles enter into the imports of Egypt, the values being given in round numbers:

Article.	Value.	Article.	Value.
Furniture and wooden ware	$480,000	Printing, writing, and wrapping paper	$400,000
Porcelain, earthen, and glass ware	535,000	Iron and ironware	2,715,000
Drugs and chemicals	345,000	Copper, brass, and bronze	670,000
Soap	275,000	Machines and parts of	945,000
Cotton yarn	525,000	Railway and street cars	385,000
Textiles:		Electric instruments	300,000
Cotton	5,555,000	Office furnishings and small wares	640,000
Woolen	560,000	Flour and starch	1,475,000
Silk	310,000	Coal	2,040,000
Other	360,000	Liquors	305,000
Laundry wear	800,000	Wines	420,000
Ready-made clothing	570,000	Cheese	270,000
Carpets and woolen blankets	375,000		

Our exporters should direct their efforts toward Egypt.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 19, 1903.*

Foreign Trade of Austria-Hungary.—The imports of Austria-Hungary during the first seven months of 1903 amounted to $219,097,900 and the exports to $235,195,800, an increase as compared with the same period in 1902 of $13,134,100 in imports and of $29,232,000 in exports. Austria-Hungary is making vigorous efforts to enlarge her export trade, and with good success.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 24, 1903.*

Austrian Floating Exhibition.—According to the leading paper of Vienna, Austrian exporting circles are contemplating the fitting out of a steamship for a floating industrial exhibition to visit the ports of the East Indies and eastern Asia. A similar enterprise, undertaken in 1901, brought profitable results to Austrian manufacturers and exporting houses which participated therein.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 15, 1903.*

Foreign Commerce of Bulgaria.—The foreign trade of Bulgaria for the first six months of 1903 is given as follows: Imports, $7,430,500, against $6,422,075 for the same period of the preceding year; exports, $9,109,600, against $8,202,500 for the corresponding six months of 1902. Of the imports, $965,000 came from Germany, $1,891,400 from Austria-Hungary, $1,582,600 from Great Britain, and $1,080,800 from Turkey. The United States seems to have no interest in the trade of Bulgaria.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, September 4, 1903.*

Industrial Establishments in Russia.—According to official statements just published there were in Russia, at the beginning of 1902, 17,786 industrial establishments employing 1,710,735 persons, of whom 73.2 per cent were males and 26.8 per cent females. The female employees have increased in number, especially in the establishments engaged in the manufacture of cotton textiles, matches, and cigars and cigarettes. The Russian factory inspectors during 1901 made examinations of 70 per cent of all industrial works.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 21, 1903.*

Shoe Polish in Russia.—Shoe blacking and polish is in good demand in Russian markets, where these articles have as yet little competition. As the United States is admittedly the greatest producer of these articles, American manufacturers and exporters should pay more attention to the Russian market.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 31, 1903.*

British vs. German Trade in Russia.—The British consul-general at St. Petersburg, in his report for the year 1902, again adverts to the fact that Germany is gradually crowding out England from the Russian markets. He counsels his countrymen to adopt German methods in seeking foreign trade, viz, sending agents and commercial travelers to Russia who speak the Russian and German languages. He also advises the establishment of sample warerooms for British goods in Russian trade centers and that the utmost care be taken in packing for export. In 1902 Germany exported goods valued at $104,905,194 to Russia, $1,415,000 in excess of the exports for previous year; whereas British exports amounted to but $51,348,388, $2,075,000 less than the exports of 1901.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 26, 1902.*

Export of Russian Butter and Eggs.—The exportation of butter and eggs from Russia is assuming large proportions. The regular steamship service lately established between Riga and London for the transportation of butter and eggs to England could not carry all the consignments and an extra steamship of large tonnage had to be added thereto. Even then about 30 carloads of butter could not be shipped as promptly as desired. Russian butter is even shipped from Siberia to Denmark. Some time ago frauds were discovered in this trade, some of the kegs coming from Tomsk, Siberia, being filled with bricks, sand, and hay. The Russian Minister of Finance has instituted an investigation in order to punish the perpetrators. To prevent a recurrence of such frauds the minister has directed safeguards to be adopted at the place of shipment and while the goods are in transit.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 31, 1903.*

Railway Tunnel in Manchuria.—The tunnel through Khingan Pass, Manchuria, will not be completed for another year. It will be some 10,000 feet in length. Many thousand Chinese are employed. Two tunnels are being cut, the upper one for removing the débris. Considerable difficulty has been met with, but there is no doubt of its ultimate success, nor of the saving in time it will effect over the Chinese Eastern Railroad.—*Richard T. Greener, Commercial Agent, Vladivostock, Siberia, July 3, 1903.*

Railway Accidents in the United Kingdom.—The English Bureau of Commerce has published a report covering the railway accidents of the United Kingdom which shows that 1,171 persons were killed and 17,814 injured in 1902. As compared with 1901 the killed and injured were as follows: Of every 9,211,002 passengers 1 was killed in 1902, against 1 in every 9,684,414 in 1901; 1 was injured of every 466,700 passengers in 1902, against 1 in every 546,511 in 1901. The total mileage of the railways of the United Kingdom at the close of 1902 was 22,152 miles. Most of the roads have double and triple tracks.—*Richard Guenther, Consul-General, Frankfort, Germany, August 19, 1903.*

Lessening Noise on Elevated Railways.—Some interesting experiments are in course of prosecution on the Berlin elevated electric railway. Complaints have been frequent concerning the noise made by the cars on the elevated structure. The first experiment consisted in inserting three layers of felt between the rails and the wooden crossties on which they were laid. This was inadequate, however, although it gave some improvement. Next, hollow iron girders filled with loose sand were substituted for the wooden sleepers; this also was partially effective, but not entirely so. The rails were then laid on long longitudinal sleepers with cushions of lead under them. Finally, the car wheels have been lined with wood, so as to break the continuity of the path for vibrations through metal. These experimental remedies are still on trial, but no definite conclusions concerning them have been announced.—*Oliver J. D. Hughes, Consul-General, Coburg, Germany, August 24, 1903.*

Projected Railway in the State of Veracruz, Mexico.—In a report from Veracruz, Mexico, Consul W. W. Canada says:

José L. Perez & Sons, merchants, of Tlacotalpan, State of Veracruz, Mexico, are engaged in the formation of a company for the exclusive purpose of connecting the county of Los Tuxtlas by railroad with one of the established lines of communication. Several attempts have been made heretofore to effect this, but all of them have failed. The county is renowned for the quantity and quality of the tobacco raised in that vicinity. The line is to start from Saltabarranca, crossing rich agricultural lands on which are a number of large haciendas, and will pass very close to 19 American plantations on its line to San Andres Tuxtla. From Saltabarranca to Tlacotalpan the traffic will be by river transportation to the Gulf coast.

The Mexican Government has authorized the several railroad companies in Mexico to increase their freight and passenger rates 15 per cent above the maximum rates heretofore charged. This privilege is to be in force until December 31, 1903. Meanwhile, the ruling rate of exchange is above 2.2 per cent.

Transportation of Live Fish.—Acting upon the principle that fish live with ease in any water if it is supplied with oxygen, European exporters are beginning to use metallic tubs to which oxygen generators are affixed in such a manner as to feed the water regularly with the gas, which escapes when the pressure surpasses that of the atmosphere. Recently by this means 40,000 trout were exported from Switzerland to England, Germany, and Austria, of which number only 400 died.—*Thornwell Haynes, Consul, Rouen, France, September 3, 1903.*

Cyclone in Martinique.—The cyclone that passed over Martinique the night of August 8–9, 1903, did great damage to the entire island. The storm began shortly before 10 p. m. and increased in violence for an hour. After a short calm it began again with increased fury, lasting more than an hour, when it abated gradually, though continuing to blow throughout the night. The rain was hard and the atmosphere surcharged with electricity. The next day ruin was shown on every hand. Buildings were destroyed and about 60 deaths are reported. There will be no crops and little fruit until another season. The colony has asked a loan of 500,000 francs ($96,500) from France to assist in repairing the damage.—*John F. Jewell, Consul, Martinique, West Indies, August 18, 1903.*

New Revenue Stamps in Honduras.—In accordance with the decree of July 31, 1903, on and after the 8th day of August last, in the Department of Tegucigalpa, and on and after the 1st day of September, 1903, in all the other Departments, there shall only be used, in conformity with the law of stamped paper and stamps, such revenue stamps as are countermarked with a series of circles interlacing long-pointed stars, the design to vary in color according to the denomination of the stamp. All persons possessing stamps recently in circulation may exchange them only at the office in the treasury during the month succeeding the day and date established for the introduction of the countermarked stamps, upon proof as to the origin of their procurement. The use of stamps not countermarked shall be held counterfeiting, punishable under the penal clause of the law of stamped paper and stamps, promulgated April 9, 1897.—*Alfred K. Moe, Consul, Tegucigalpa, Honduras, September 7, 1903.*

New Revenue-Stamp Law in Haiti.—Consul Alexander Battiste writes from Port au Prince, Haiti, August 28, 1903, that a law recently passed by the Legislature makes certain modifications augmenting the stamp dues on commercial and judicial documents, as follows:

All documents under private seals up to $100, 5 cents; over $100, 10 cents.

Bills, notes, etc., $200, 10 cents; $500, 20 cents; $1,000, 35 cents; $5,000, $2; and over $10,000, $10.

Notarial acts, $500, 10 cents; above $500, 20 cents.

Acts of partnership, separation, division, etc., $1.35.

Inventories, 20 cents.

Marriage contracts, $1.35.

Bills of sale, leases, etc., $500, 35 cents; $1,000, 70 cents; above $10,000, $10.

Commercial acts: Each leaf of the journal or inventory book must be stamped with a 5-cent stamp.

Passports to go on the American continent or the other side of either ocean, $15; for this side, $4.

This law goes into effect on the 1st of October, 1903.

Butter-Making Machinery in Canada.—Quebec and Ontario are the best butter-producing Provinces in the Dominion of Canada. One can hardly travel in any direction without seeing a creamery or a cheese factory. Small farms are scarce; on the other hand the acreage to a farm is generally 200 or more, most of which is given up to pasturing and the raising of hay and grain. The average number of cattle to a farm is 30 or more. Since the establishment of creameries at almost every hamlet or village in these Provinces the making of butter by hand has been done away with. I find that separators from the United States can compete with those of Canadian make, and as separators are on the free list I am surprised that our manufacturers have not taken advantage of this, as well as of the excellent market, to extend their trade in these Provinces. In Canada, I am convinced, there is a splendid field for our people to operate in. The Canadians, as a rule, are anxious to try our machinery, which is superior to their own, as well as cheaper in price, and I would suggest that our manufacturers send their salesmen to these Provinces to work up this trade.—*Felix S. S. Johnson, Commercial Agent, Stanbridge, Canada, September 1, 1903.*

Ostrich Farming in Australia.—Ostriches have been introduced into Australia and the experiment of their acclimatization and rearing have proved highly successful. Twenty-two of the birds were brought from Africa and were placed on a farm near Sydney. They are fed on rice, Indian corn, and vegetables, requiring but little water. They lay eggs about three times a year, and from 20 to 30 eggs at each laying period. The bird matures in two and a half to three years. Those raised in Australia produce magnificent feathers, pure white, measuring 27 inches in length by 15 inches in width. Our southwestern territories (Arizona and New Mexico) might prove profitable fields for ostrich farming.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 29, 1903.*

Future of Para Rubber.—This question has been dealt with in a recent number of the Journal d'Agriculture Tropicale by Paul Cibot, who lived for some time in the rubber forests of Bolivia. The extensive Amazon region—where the *Hevea* trees grow in the virgin forests—still supports a whole army of rubber collectors, but from year to year these have to look farther afield for new trees, the trees only yielding four years at a stretch. Assuming that a group of 150 trees distributed over an area of 15 hectares (38 acres) yields about 500 kilograms (1,102 pounds) of rubber per annum, the annual export of 25,000 tons of Para caoutchouc is equivalent to 7,500 square kilometers (2,895 square miles) of land under caoutchouc trees. Although the Amazon region covers 5,600,000 square kilometers (1,962,216 square miles), perhaps not more than one-twentieth part of this area can be referred to as caoutchouc-tree bearing, the *Hevea* principally growing in proximity of the water courses, while certain stretches of forest land are entirely free of rubber trees. This leaves about 280,000 square kilometers (108,108 square miles) of rubber-yielding area, half of which has already been exploited, leaving about 140,000 square kilometers (54,054 square miles). The near outlook is therefore not so bad as is generally considered, but it appears likely that in a few decades all the water courses of this region will be more or less denuded of their *Hevea* growth. If the African and other natural sources of rubber were by then also to commence giving out, the time will have arrived for tapping the *Hevea* trees now planted.—*Oliver J. D. Hughes, Consul-General, Coburg, Germany, September 8, 1903.*

Tea Growing in Kamerun.—The government of the German colony Kamerun, Africa, has planted a large tract with tea shrubs, as past experiments have proved the soil and climate of that colony favorable to the cultivation of the tea plant.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, August 15, 1903.*

Tea Cultivation in Persia.—Vice-Consul-General John Tyler sends from Teheran, August 14, 1903, translation of an article extracted from numbers of the official gazette Iran on the introduction of the cultivation and preparation for consumption of tea in Persia. Mr. Tyler says that in the different stages of the enterprise great difficulties and obstacles had to be overcome. He adds that with a sufficiency of capital to insure scientific direction and the acquirement of the best implements and machinery for the work, the undertaking should be not only profitable but of economic advantage to Persia.

Tariff on Cracked Oats in Venezuela.—Consul E. H. Plumacher, writing from Maracaibo, Venezuela, August 10, 1903, reports a recent law which says that when cracked oats are imported through the custom-houses of the Republic they shall be classified in the third class of the tariff, like the corn and wheat that are imported in the same form.

Duty on Packages to Holland.—In a dispatch dated August 27, 1903, Stanford Newel, United States minister at The Hague, reports a royal order, which was to take effect August 16, 1903. The order says that "on account of the troubles in connection with the declaration and clearance of packages from foreign countries, a duty of 5 cents per package shall be levied, to be paid by the party to whom the package is addressed."

Increased Export Duties on Wood in Haiti.—Consul Alexander Battiste, writing from Port au Prince, Haiti, August 28, 1903, reports a law recently passed by the Legislature making an augmentation of 75 cents per 1,000 pounds export duty on guaiac wood and imposing a duty of $1 per 1,000 pounds on cedar wood. This law goes into effect on the 1st of October, 1903.

Reduction of Duties in Madagascar.—The Official Journal of Madagascar announces a modification of the general tariff of custom dues on certain imports into Madagascar of foreign production, particularly pepper, pimento, tea, and tobacco. This modification implies a reduction of exactly one-half of the duties hitherto charged on these commodities. The modified duties per 100 kilograms (220.46 pounds) are as follows: Peppers, pimentoes, and teas, $20.07; tobacco, in leaves or stalks, $9.65.—*William H. Hunt, Consul, Tamatave, Madagascar, August 15, 1903.*

Effect of the Canadian Preferential Tariff Law.—The imports into Canada from the United Kingdom and from the United States since the passage of the Canadian preferential tariff law of 1897 were as follows:

Year ended June 30—	Imports for consumption (including bullion and specie).	
	From the United Kingdom.	From the United States.
1897	$29,412,188	$61,649,041
1898	32,500,917	78,705,590
1899	37,060,123	93,007,166
1900	44,789,730	109,844,378
1901	43,018,164	110,485,008
1902	49,206,062	120,814,759
1903	65,007,080	137,605,195

Preferential Trade in Australia.—Consul-General John P. Bray writes from Melbourne, Australia, July 23, 1903, as follows:

After a notice of motion had been given at a previous meeting, the following resolution with regard to preferential trade with Great Britain was adopted by the Melbourne Chamber of Commerce at a meeting held on the 21st instant:

> That this council, while expressing no decided opinion on the subject at this juncture, strongly feels that the distinguished services rendered to the colonies by Mr. Chamberlin entitle any request of his to respectful consideration. The council, therefore, earnestly hopes that the federal government will take such steps, by the appointment of a royal commission, or otherwise, to carry out the request of Mr. Chamberlain; that an inquiry be made into the question of preferential trade, so far as it affects the Commonwealth, as will conduce to the education of the public mind on the subject and the arrival at such conclusions as will enable a definite expression of opinion to be given to Mr. Chamberlain when asked for by him. That a copy of this resolution be forwarded to the Prime Minister.

Industrial Activity in Spain.—During the year 1901, the latest for which statistics are available, the output of iron in Spain amounted to $7,874,000 and of coal to $4,535,500. The output of copper and lead is increasing. In that year there were 3,049 mining establishments in the country, employing 88,382 persons, and 138 rolling mills and iron works, employing 22,167 persons. Within the last ten years Spain's importation of machinery has doubled. In 1902 it amounted to 35,626 tons, of which 12,130 tons came from Germany, 10,044 tons from England, and 1,859 tons from Switzerland. Our American manufacturers of machinery should strive for a share in this trade. When Switzerland, which has neither coal nor iron and, being an inland country, must incur heavy railroad freight charges on her machinery exports, can export machinery to Spain, it appears as if American manufacturers, with all their advantages, should be able to fill a large part of Spanish machinery wants.—*Simon W. Hanauer*, *Deputy Consul-General*, *Frankfort*, *Germany*, *August 11*, *1903*.

FOREIGN REPORTS AND PUBLICATIONS.

Spanish Trade.—The España Economica y Financiera (a Spanish publication) of July 26, 1903, says that in the first six months of 1903 Spain's imports, exclusive of gold and silver, were valued at $76,061,300. For a like period in 1902 the importations amounted to $2,123,000 less, and for the whole year 1902 to only $5,519,800 more than for the first six months of 1903. The same tale is to be told in regard to exports. In 1901 Spanish exports amounted to $60,930,100; in 1902, to $66,642,900; in the first six months of 1903, to $51,550,300. The adverse balance of trade, which in 1901 was $20,651,000 and in 1902 $7,276,100, stood at $5,211,000 for the first six months of 1903. The importation of foods, raw materials, and manufactured articles was larger in the first half year of 1903 than for like periods in 1902 and 1901. The export of Spanish raw materials increased also—from $28,100,800 in 1901 to $29,529,000 in 1902 and to $30,551,900 in 1903 for like periods of time. During six months manufactured articles went from $12,660,800 in 1902 to $14,475,000 in 1903. The foods exported for the six months of 1903 were valued at $25,804,100; for a like period in 1902, $24,472,400; and in 1901, $18,914,000. Thus, while the situation is improving slowly it is far from giving the satisfaction desired. The exports of wine during 1903 fell off $135,100 as compared with 1902 and $1,486,100 as compared with 1901. The exportations of oil—mostly olive oil—amounted to $6,214,600 in 1903, against $6,484,800 in 1902. The export of oranges increased notably—$8,569,200 in 1903, against $7,141,000 in 1902 and about $5,211,000 in 1901. The importation of wheat in the first six months of 1903 was $810,600 over 1902. The customs revenues amounted to $13,683,700, about $289,500 less than was expected by the budget estimates. By the sale of rights to export and import, $4,496,900 in gold were paid into the treasury.

The following tables give a graphic view of the first six months' trade movements for the years indicated:

Il Economista of August 15 says that Spain's exports were:

1897	$187,623,085
1898	157,157,525
1899	148,264,131
1900	145,442,773
1901	133,569,623

The falling off in the trade with Cuba since 1899 was more than 50 per cent.

In the exports of wines, the falling off in white wines, which are hard to imitate or adulterate, compared with the first half of 1900, was relatively small—from 980,780 gallons to 825,409 gallons in 1903—while the falling off in red wines was from 6,500,131 gallons in the first half year of 1900 to 3,344,508 gallons in the first half of 1903. In the one case the decrease was 155,371 gallons; in the other, 3,155,623 gallons.

IMPORTS.

Article.	1901.	1902.	1903.
Raw materials	$40,346,650	$40,155,580	$41,010,570
Manufactured articles	27,241,950	23,976,390	24,339,230
Foods	14,002,150	9,790,890	10,713,430
Total	81,590,750	73,922,860	76,063,230
Gold in ingots and in coin	32,810	345,470	25,090
Silver in ingots and in coin	739,190	872,360	976,580
Total imports	82,372,750	75,140,690	77,064,900

EXPORTS.

Raw materials	$28,100,800	$29,530,930	$30,561,550
Manufactured articles	13,923,020	12,674,310	14,486,580
Foods	18,915,930	24,451,170	25,809,890
Total	60,939,750	66,656,410	70,858,020
Gold in ingots and in coin	19,300	28,950	5.790
Silver in ingots and in coin	2,659,540	928,330	2,171,250
Total exports	63,618,590	67,613,690	73,035,060

Opportunities for American Contractors.—The British and South African Export Gazette of August 7, 1903, says:

> The vivifying impulse to enterprise in the Transvaal and Orange River colonies which the peace settlement has brought forth is steadily permeating South Africa as a whole, and the maritime colonies are not the last to feel the impulse. Natal, as previously indicated, has already been responsive to it, and now is the turn of Cape Colony, the eastern ports of which are ahead of Cape Town, as usual, in answering to the call of up-to-date ideas.
>
> In November last year we chronicled the sanctioning by the Cape parliament of a vote of $1,745,613 for harbor-improvement works at Port Elizabeth, and also gave the details of the objects of the disbursement. As we then pointed out, this sum was inadequate to realize certain important works, such as the increase of the jetty accommodations, etc. Over and above both these disbursements and projects, however, the authorities at Algoa Bay have at heart the desire to provide the port with a harbor which shall afford shelter for vessels in the case of such storms as that which swept the South African seaboard some months ago, and from which shipping lying in the open roadstead suffered so terribly. With this object in view, Mr. C. W. Methven, M. I. C. E., the well-known harbor expert, who has been consulted on so many South African ports, was invited by the harbor board to investigate and report on the practicability of opening up the mouth of the Zwartkops River for harbor purposes. His report is conclusive as to the feasibility of the project. He advocates the dredging of the river, the drainage and reclamation of

the marshes along its shores, the construction of two breakwaters at the river mouth, and the building thereon of 3,700 feet of quayage, shedding, etc.

The estimated cost of all the works required totals, in round figures, $6,813,100. After consideration and approval by the local authorities and by the government department concerned, parliamentary sanction to raise the necessary funds will be sought. Before this stage is reached the British manufacturer will probably have the opportunity of tendering for the major part of the multiplicity of materials, machinery, and equipment required. In due course we shall announce the progress of this matter; but in the meanwhile the opening is afforded for steps to be taken, through representatives on the spot, to secure such further information regarding possible requirements as may be obtainable.

It is understood that the construction of the railway to Lobatsi by the Krugersdorp-Rustenburg route has been finally decided upon. This will bring Bulawayo within two days of the Rand.

Iron and Coal in America and Germany.—Stahl und Eisen, a German newspaper, publishes a very interesting paper read by Herr Macco before the latest convention of the Verein Deutscher Eisenhüttenleute relative to American and German iron and coal production. The paper read by Herr Macco is a comparative statement of facts obtained from technical investigation and deals largely with conditions in the United States. The following statement, translated in the Bureau of Statistics, is from the paper referred to:

During the past eleven years the average productive capacity of American mines per man and per day has increased more than 25 per cent, while in Germany it has, if anything, diminished. This fact is attributed to the increased use of coal-cutting machinery. Of the bituminous output for 1901, 25.7 per cent was machine mined. Notwithstanding the fact that higher wages are paid in America, coal is much cheaper than in Germany, some years it being less than half the price of German coal.

By a comparison of the price of American and German coke it is shown that the German price is from one and a half to two times as great.

Comparing American iron ores with German, and taking into account the higher percentage of iron in the American, it is found that their average price is decidedly lower than that of the German ores.

On comparing the location of the iron furnaces with that of their raw material, it will be found that, with the exception of some of the iron works in the Southern States, their geographical situation is not favorable. This is not so striking in the case of fuel, although even that has to be carried a greater distance, on the average, than in Germany. While the railway freight rates per ton mile in Germany are higher than in America, yet, as the average haul in Germany is shorter, there is not a great disparity in the total railway transportation charges. But with the cheaper water route through the Great Lakes for transporting ore, and the railroads specially constructed for carrying ore and fuel, together with all the labor-saving machinery for handling ore and producing fuel, the raw material and fuel are delivered to the furnaces at a considerably lower cost than in Germany.

Porto Rican Sugar.—In its issue of July 23, 1903, the Moniteur Officiel du Commerce, a French publication, says:

The sugar crop of 1902-3 in Porto Rico has been satisfactory. In one district—that of Arroyo—the density of the sap reached 11° Beaumé. The total crop in the district of Mayaguez reached 7,500 tons. Many plantations in the Ponce district suffered from drought. This retarded the growth of the cane, causing it to yield 8 to 10 per cent less than last year. Ponce has already exported 18,100 metric tons (of 2,204 pounds each). That port expects to send out 25,000 tons during the year. If the weather is favorable the exports of Ponce in 1903-4 will be 30,000 tons. These figures for only three districts give a good idea of what is being done in the sugar fields all over the island.

Mexican Fruit for the United States.—El Economista of August 22 says:

Mexico promises to become a great fruit-growing country. It promises also to send considerable quantities of its fruits to the United States. The figures relating to the planting of fruit trees during recent years are very important. They have been planted all over the Republic, almost every section being well suited to fruit raising. While it is true that some fruit trees require years for their growth, there are others that yield rich crops in one, two, and three years. The plants that produce the pineapple, melon, and watermelon yield annual crops, and the demand in the United States is largest for just such fruit. The various kinds of bananas grow abundantly in the warmer parts of Mexico. These may be added in large quantities to the fruit exports to the United States.

German Commercial Expert for Buenos Ayres.—According to Nachrichten für Handel und Industrie, a German official paper, issue of September 7, 1903, Dr. Karl T. Stoepel has been appointed as a commercial expert to assist the German consul-general at Buenos Ayres. Before he sets out for his post Dr. Stoepel is to visit all parties in the Empire who carry on business not only with Buenos Ayres, but with any part of the Argentine Republic.

Steel Combination in Europe.—German papers are publishing reports of the formation of a great steel combination analogous to the famous United States Steel Corporation. It is composed of all the great Rhenish steel mills, including Krupp's. A Berlin syndicate with a capital of 500,000,000 marks ($119,000,000) has just joined. It is expected that the Silesian mills will soon enter. The new corporation begins operations in December.

An English View of the Philippines.—The Pall Mall Gazette of September 9, 1903, discussing British possessions, past and present, in the various parts of the world, has the following regarding the Philippine Islands:

> We have but to examine the map of the Eastern Hemisphere to recognize what a powerful position we should be occupying on the eastern flank of China to-day had we retained not only Java, the Moluccas, and the Celebes Islands, but especially the rich group of the Philippines, which were ours by every right of conquest in 1762, and had been justly forfeited by Spain, whose hostility had been prompted by the belief that she had caught us at a time of disadvantage. But they were lightly surrendered by statesmen who possessed no just idea of a colonial empire, and who, although the country was emerging from a victorious war, were too spiritless to resist the demand of the vanquished for the restoration of their forfeited possessions. We can not reflect upon the loss of this splendid and legitimate prize without a considerable measure of bitterness.

South African Wool.—From the African Review of August 29, 1903, the following statistics are taken:

> The statistics of the total number of sheep and goats for 60 districts out of a total of 74 districts were 39,257 flocks, including 13,684,675 head. An estimate of the 14 districts which had not made returns is placed at 6,000 flocks, with 2,100,000 sheep and goats, bringing the grand total to 45,000 flocks, containing 15,700,000 animals. Roughly, at 10s. ($2.43) per head, the value of the flocks would represent £7,850,000 ($38,200,000). The number of stock reared in the 60 districts reported was about 27 per cent. The increase made since 1898 is shown by the following table, in which the returns for the 14 districts in the colony proper do not appear:

Region.	Increase.	
	Number.	Value.*
Cape Colony	1,774,419	$4,317,602
Transkei and Tembuland	430,101	1,046,540
Griqualand East	209,855	510,628
Total	2,414,375	5,874,770

*At 10s. ($2.43) per head.

> Adding to the total of the flocks in the colony proper (15,700,000) the total of Transkei, Tembuland, and Griqualand East—namely, 3,013,182—we have a grand total of approximately 19,000,000 sheep and goats, roughly valued at £9,500,000 ($46,231,750).

The World's Maritime Statistics.—Lloyd's Register for 1903-4 puts the world's mercantile marine on July 10, 1903, at 29,943 steamships of 27,183,365 tons and 12,182 sailing vessels of 6,459,766 tons.

The principal nations are represented in the following table:

Country.	Tonnage.	Country.	Tonnage.
England	16,006,374	Holland	658,845
United States	3,611,956	Denmark	581,247
Germany	3,283,247	Austria-Hungary	578,697
Norway	1,653,740	Greece	378,199
France	1,622,016	Belgium	157,047
Italy	1,180,335	Brazil	155,086
Russia	809,648	Turkey	154,494
Spain	764,447	Chile	103,758
Japan	726,818	Portugal	101,304
Sweden	721,116	Argentine Republic	95,780

Movement of Trade in the Kaiser Wilhelm Canal in 1902.—The tonnage—4,573,834 tons—that passed through the Kaiser Wilhelm Canal during 1902 covered 32,010 ships. The passage money paid for them was 2,217,483 marks ($527,760). In comparing the figures of 1902 with other years, one finds a satisfying if not gratifying increase. The figures for the preceding year were: Ships, 30,314; tonnage, 4,347,989 tons; receipts, 2,149,708 marks ($511,630). This year, for the first time since it was opened, the receipts of the canal were larger than the expenses. These latter run up to 2,082,225 marks ($495,570), leaving a balance on the right side of the ledger of 125,000 marks ($29,750). The rights of tuggage are comprised in the total of taxes or receipts, and it is not certain that their total is put down to the credit of the canal. Among the 32,010 boats registered, 14,289 were steamers. The nations represented by these were: Germany, 27,174; Holland, 1,419; Denmark, 1,217; Sweden, 982; Great Britain, 505; Norway, 338; Russia, 301; Belgium, 24; France, 13; all other, 37.

Binding Material for Briquettes.—The following article was translated in the Bureau of Statistics from Das Handels Museum of July 23, 1903:

> A long time ago a process was discovered and patented by which the lye of paper pulp or cellulose could be used as a means of binding together the materials used for making the various kinds of fuel briquettes. The process was one by which the lye was brought to the consistency of pitch or in some cases to dryness by means of steam. This process had one great fault—a skinlike covering formed on the surface of the briquette which hindered the escape of the gases during the application of the steaming process. To carry out the steaming process, therefore, a higher temperature had to be secured, necessitating the use of a considerably larger amount of coal. There were also other drawbacks. To prevent the formation of this skin another process was invented and patented. By this, excellent results are secured by mixing tar, pitch, asphalt, wacke, etc., with the mass during or just before the briquette making begins.

Stone from Sand.*—African Commerce, a monthly magazine published in London, contains in its July issue a review of an invention of Mr. L. P. Ford (attorney-general of the Transvaal in 1887, now a resident of London) of silicate-of-lime stone, from which the following paragraph is taken.

Silicate-of-lime stone is made of silica and lime, subjected to heat and pressure, whereby a silica-of-lime stone is formed as a matrix. Mr. Ford's patent is not a concrete but a chemical combination which has the appearance of a fine-grained sandstone and can be carved easily and cheaply, with as good results as natural stone. It has all the advantages of natural stone and in addition its crushing strength is superior to Portland stone, and it has other points which commend it highly to the building trade. Stanger & Blount, the well-known analysts, say: "Its regularity of fracture indicates great uniformity of texture and strength." It resisted frost and corrosive atmospheres. Those in the business are thoroughly satisfied with its carving qualities, which they say are as good as those of the best natural building stones. It is suitable for use in salt as well as in fresh water, and it hardens with time. By the addition of coloring matter it can be made in colors. In the development of building estates where sand and chalk deposits are more numerous than either natural building stone or brick clays, the silicate-of-lime stone has decided advantages. Bricks, tiles, and paving stones can be made by the process, which is extremely simple. Demonstrations have been made from sand in the various industrial centers. In Johannesburg, Durban, and other parts of Africa, where natural stone and brick earths are rare, the silicate-of-lime stone will be invaluable.

Wages Abroad as Influenced by Legislation.—España Economica y Financiera, in its issue of August 2, 1903, says:

The Chamber of Commerce of Essen, Germany, has just published an interesting memorial on the influence of protective tariffs on wages and on the conditions of the working classes. Referring to the district of Essen, the chamber establishes the fact that the average wages, which were 3.30 marks (79 cents) in 1871, were 3.89 marks (93 cents) in 1875, but again went down to 3.30 marks (79 cents). In 1879 a system truly protectionist was inaugurated. From that time on wages went up from 3.57 marks (85 cents) in 1882 to 3.71 marks (88 cents) in 1888, 4.06 marks (97 cents) in 1892, 4.10 marks (98 cents) in 1895, and 4.78 marks ($1.14) in 1900. The conclusion drawn by the chamber of commerce experts from the facts cited is that wages remained practically at a standstill during the years 1875–1879, just preceding the protectionist era, while the advance during the later, or protection, period was fully 58 per cent. To meet the objection that foods have gone up faster than wages, thus neutralizing the increased purchasing power of the laborer, the chamber shows that the foods consumed by the laboring classes dropped as follows: Bread, 20 per cent; potatoes, 29 per cent. Beef increased only 5 per cent; veal, 21 per cent; and pork, 27 per cent.

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* See also "Galalith, or milk-stone, manufactures" in MONTHLY CONSULAR REPORTS No. 276, p. 73, and "Manufacture of calcareous bricks and stones" in DAILY CONSULAR REPORTS No. 1767.

Foreign Trade of Mexico.—A résumé of a report of Mexico's foreign trade published in El Economista Mexicana of August 22, 1903, shows the following facts:

The imports during the fiscal year amounted to $63,264,500 in gold, of which the proportion from the United States was 58 per cent, from Great Britain 13 per cent, and Germany and France 10 per cent each. Nearly every European country lost ground, while the United States gained, and in about the same ratio that Europe lost. One reason advanced for the European decline in Mexican trade is the improved native manufacture of textiles. Local factories are now making very good woolen suitings, both for men and women, and less of these goods will be imported each year. This year a new departure has been made with a view to develop the Mexican textile trade. The Government has sent a commission, consisting of two merchants and an expert from the customs department, to South America with a view to opening up trade with those countries in Mexican products.

The United States leads in furnishing both the machinery and the raw material for this new industrial development in Mexico.

The exports, outside of metals, amounted to $63,332,631 in gold, of which the United States took 81 per cent, while all Europe took but 15 per cent.

The British consul resident at Veracruz suggests to the manufacturers of Great Britain that they appoint regular agents, more travelers, and employ lists and catalogues in the Spanish language, and make the articles the people want.

Brazilian Imports.—Das Handels Museum of August 6, 1903, says:

Brazil imports pig iron from Belgium and Great Britain, cast-iron sewage pipes from Belgium, galvanized water pipes from Germany, rails from France, while iron bridges, which the Government uses in road building, come mainly from Germany. The steam engines used on the coffee plantations come mostly from Great Britain. In imports of unmanufactured iron and industrial articles, such as iron rails, Germany leads. The better qualities of hoes come now from Great Britain, and the better grades of axes are imported from the United States. Shovels and spades come partly from Germany, but mostly from Great Britain; hammers and tongs, from Germany; the cheaper grades of wood knives from Great Britain, while the better qualities are imported from Germany. Zinc and soldered sheet-iron buckets come from Great Britain; enameled iron utensils and sheet-iron wash basins, from Germany; while metallic and enameled plates and galvanized kitchen utensils are imported from Great Britain. Enameled cast-iron pots come from Germany. All kinds of iron house fixtures were formerly imported from the United States, but now come from Germany. Bolts and nails come from France. Formerly barbed wire was imported from Germany, but now comes mostly from the United States, Great Britain, and Belgium. Wire nails are no longer imported, but are manufactured in the country. Tinware is imported from Great Britain, iron wheelbarrows from the United States, while plows are partly German, but mainly of American manufacture.

Argentina's Meat Supply.—In ADVANCE SHEETS NO. 1602 (March 24, 1903), the Bureau of Statistics published the terms of the Argentine-Uruguayan convention as to sanitary inspection of live stock, the completion of which was necessary to bring about a reopening of the British ports to Argentine stock. To that convention is due, perhaps, the recent increase in the meat production of the Argentine Republic, as shown by the following statistics taken from the South American Journal of August 29, 1903:

> Extraordinary progress has been made in recent years in Argentina in the production and export of beef and mutton. Whereas in 1895 it was difficult to get 40,000 steers in all Argentina that were fit for the British market, the output since then has increased by 40,000 head per annum, and last year it totaled 250,000 head. Argentina's export of beef and mutton will continue to go up by leaps and bounds. It is not unreasonable to believe that by the end of the present decade Argentina will be able to export to the European market—which practically means the British market—no less than 10,000,000 cwts. of beef and 5,000,000 cwts. of mutton. The resources of Argentina are practically unlimited, and they have been immeasurably developed in recent years by the wholesale laying down of Argentine lands to alfalfa, a very nutritious leguminous crop, which enriches the land with nitrogen accumulated from the atmosphere and is, through its deep-rooting habits, practically uninjured by drought. There appears to be no reason to doubt that the exports of beef and mutton from Argentina will continue steadily to increase. Indeed, it seems clear enough that between Canada, on the one hand, as an exporter of wheat, and Argentina, on the other hand, as an exporter of meat, the British farmer will before long have to face a keener and more cutting competition than ever before.

Brazilian Trade and Finances.—The South American Journal of August 29, 1903, says:

> A consular report from Rio de Janeiro states that the present Government has successfully continued the policy of maintaining the country's credit abroad and reducing the amount of paper currency in circulation. The amount of paper money in circulation on December 31, 1901, was 680,451,058 milreis* ($136,090,211); that in circulation on March 31, 1903, was 675,411,021 milreis ($135,082,204). The foreign debt in January, 1902, stood at £49,881,677 ($242,749,182). An additional issue of some £14,000,000 ($68,131,000) rescission bonds for the purchase of subsidized railway was made during the year. The internal funded debt payable in gold was 27,529,000 milreis ($14,883,314) and that payable in paper was 543,410,537 milreis ($108,682,107), while the floating debt was 167,083,912 milreis. For the necessities of the Government the amount of taxation at present collected is not heavy. For the most part and of necessity taxation is indirect, but it is the system of taxation which in many ways is injurious to the country. Duties are levied on exports, which tends to restrict production, which is further restricted by interstate and consumption duties and by taxes on passenger and freight traffic. The crisis in the coffee industry may prove a blessing in disguise to Brazil. At one time coffee was so remunerative that other productions were neglected and the country became dependent on importations of food stuffs; and while money was plentiful from the returns of coffee high prices were not felt, but at the collapse of this industry and the diminished purchasing power of the public these high prices and the scarcity of money have caused considerable distress throughout the country. By the collection of 25 per cent of the customs dues in gold, Government

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* The paper milreis, at latest consular advices, was valued at 20 cents.

remittances are more independent of the market and no longer cause violent fluctuations; but, on the contrary, in conjunction with the Banco da Republica, the Government exercises a steadying influence on exchange. This state of things has been advantageous to trade, especially so to the import trade, though the position of coffee has been aggravated by the high rate.

Beirut as a Trade Center.—Foreign papers are publishing reports of trade possibilities in Beirut. Among the articles for which that market is open are iron pipes, which sell well. English wares are winning their way against others that were found to be shamefully thin and weak. The pipes are sold according to diameters. Those of ordinary diameter, from one-fourth of an inch to 2 inches, bring an average price of 11d. (22 cents) per meter (39.37 inches), provided the average weight is 3 pounds per meter. The total imports are put down at 500 tons. There is also a field for sewing machines. The number imported is gradually increasing. Enameled ware is also wanted. Beirut's commercial importance is constantly increasing. In very early times, when the Romans held sway in Syria, it was the seat of a flourishing silk trade. Since the Suez Canal cut off the caravan trade that once went by way of Aleppo and Damascus to Bagdad and Mecca, Syrian commerce has turned naturally to Beirut, the safest of her harbors. Back of the city rise the mighty forests and hills of Lebanon with the fertile plateau of Keboa behind them, and behind that the Anti-Lebanon hills before one touches the plains of Damascus. In Beirut trade found only a fair harbor, but it found a population that had grown from 25,000 in 1860 to 140,000 in 1900.

It is the home of the Maronites, a people who are familiar with agriculture and house industries of all kinds, particularly silk spinning and weaving. The French began to build a magnificent road from Beirut to Damascus in 1857 and finished it in 1863. In 1894–1896 a railroad (the Beirut-Damascus) was built to Hauran, 248 kilometers (154 miles), 56 kilometers (35 miles) of which were over the Lebanon Mountains, by means of an inclined railway (toothed rails, etc.). From Hauran, as a center, other roads were run off into the interior, one of 188 kilometers (117 miles) to Hama, thus uniting the Bekaa plains with the sea. In 1893 an artificial harbor was built at Beirut, which was joined with the Damascus Railroad in 1903. The high charges for port and quay duties are damaging Beirut beyond its power to remedy. Other ports are coming into prominence. Tripoli, a few miles to the north of Beirut, with good roads into the interior, is advancing. The whole country is opening up and offers excellent opportunities for parties interested in the sale of many kinds of agricultural and industrial labor-saving machines.

Commodity Price Barometer.—Mr. A. Sauerbeck, writing in the Statist of August 8, 1903, says:

The following are the index numbers of the prices of 45 commodities, the average of the eleven years 1867–77 being 100:

Years.	Average.	Month.	Numbers.
1878–1887	79	December, 1889	73.7
1883–1892	72	February, 1895	60
1888–1897	67	July, 1896	59.2
1893–1902	66	July, 1900	76.2
		December, 1901	68.4
1884	76	May, 1902	70.9
1896	61	July, 1902	70
1897	62	December, 1902	69.1
1898	64	March, 1903	70.4
1899	68	May, 1903	69.6
1900	75	June, 1903	69.5
1901	70	July, 1903	69.5
1902	69		

The index number remained unchanged, a moderate advance in the prices of some articles of food having been balanced by a slight reaction in the case of several materials. Wheat, flour, maize, rice, mutton, and pork ruled a little higher. Sugar, coffee, and tea were in the aggregate on a par with June. Beet sugar was a little dearer, but Brazil coffee remained on a very low level.

Metals, on the whole, were weak, though there was no quotable change except in the case of copper and lead, which experienced a decline. Cotton, merino wool and hemp, tallow, palm oil, and linseed oil were easier, while coarse wool and petroleum showed some improvement.

Taking articles of food and materials separately, the index numbers compare thus (1867–1877=100):

Description.	Average.		
	1878–1887.	1888–1897.	1893–1902.
Food	84	70	66
Materials	76	65	66

Description.	February, 1895.	July, 1896.	February, 1900.	December, 1902.	June, 1903.	July, 1903.
Food	63.8	60	65.8	66.2	66.4	67.2
Materials	57	58.6	81.9	71.3	71.8	71.2

As compared with the end of last year, articles of food stand 1.5 per cent higher. Materials are practically unchanged.

Inheritances in France.—The French Government published quite recently some very interesting facts and figures concerning inheritances in France in 1902. The report merits attention because it gives one a good idea of the fortunes of the French people and because it shows the results of two reform measures that have changed methods followed up to quite recent times. One of these provides that in every testamentary disposition of property the real estate shall be set apart by itself and the personal property shall be subject to the inheritance tax; the other creates a standard or scale upon which the tax shall be based before it is imposed. It is as follows: From 1 to 2,000 francs, from 2,001 to 10,000 francs, from 10,001 to 50,000 francs, from 50,001 to 100,000 francs, from 100,001 to 250,000 francs, from 250,001 to 500,000 francs, from 500,001 to 1,000,000 francs, from 1,000,001 to 5,000,000 francs, from 5,000,001 francs on. The purpose of the legislation was to protect the people inheriting the small amounts that so often represent an element of personal labor and again a modest existence, letting the burden fall on persons possessing or inheriting large amounts. By means of this scale one knows not only the number but the size of the inheritances left in France in 1902—363,000, covering a capital of 5,241,000,000 francs ($1,011,513,000), which, after deducting the passive, leaves 4,772,000,000 francs ($920,996,000). Of the 363,000 inheritances, 213,000 do not exceed 2,000 francs and amount altogether to 240,000,000 francs ($46,320,000). The number of inheritances between 2,001 and 10,000 francs was 91,000, covering 534,000,000 francs ($103,062,000); those between 10,001 and 50,000 francs were not more than 39,000, representing 903,000,000 francs ($174,279,000). These show how many persons there are of small capital. Then comes the category of those who might with propriety be called moderate and large capitalists—the classes comprehending those whose inheritances run above 50,000 francs. In this list there are 6,964 inheritances, with 477,000,000 francs ($92,061,000), and 27 that exceed 5,000,000 francs ($965,000). Of the $32,810,000,000 that constitute the wealth of the French nation, more than $9,650,000,000 belong to the people of the middle classes, who constitute less than one-fifth of the population.

Agricultural Position of Spain.—The following is from the España Economica y Financiera of August 2, 1903:

The agricultural experts of Spain appointed to investigate the problem of the Kingdom's agricultural production have just completed their work and reported.

Cereals.—They value Spain's average crop of cereals during the last ten years at 1,325,500,000 pesetas ($255,821,500), divided as follows:

Wheat	$137,223,000
Barley	49,215,000
Maize	24,511,000
Rye	22,967,000
Rice	13,959,000
Oats	8,878,000

Vegetables.—Vegetables are valued at more than $49,408,000, that sum being reached by the following:

Pease	$12,545,000
White beans	10,615,000
Other beans	9,650,000
Potatoes	22,967,000

Wine, oils, etc.—The production of wine is valued at $69,480,000; oils (principally olive oils), at $36,477,000; and oranges, at $9,650,000. The total value of the earth's yield of fruits, etc., is put at $470,920,000. The area devoted to wine was 3,460,692 acres, a decrease of 756,072 acres compared with 1890 and a falling off in production of 197,493,492 gallons. On the other hand, the land applied to the production of olives increased 279,337 acres, forming a total area devoted to this useful and valuable fruit of 3,130,418 acres, yielding 8,076,948 bushels, an increase over 1890 of 3,702,023 bushels. The amount of land devoted to wheat is put at 8,608,774 acres and produces 7,175,193,894 pounds; the irrigated wheat lands are 541,149 acres, producing 836,105,352 pounds. The total production of wheat in 1902 was 8,011,312,475 pounds, of which 5,914,691,798 pounds are needed for home consumption and for seed, thus leaving 1,986,607,448 pounds for export.

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LIST OF PUBLICATIONS.

On July 1, 1903, the Bureau of Foreign Commerce of the Department of State, which has had charge of the publication and distribution of the CONSULAR REPORTS, was transferred to the Department of Commerce and Labor, in pursuance of provisions in the act of Congress approved February 14, 1903, creating that Department, and consolidated with the Bureau of Statistics, transferred from the Treasury to the new Department. Reports from consular officers on commercial and industrial subjects will hereafter be transmitted through the Department of State to the Department of Commerce and Labor, and the latter will publish and distribute them.

Requests for consular reports should hereafter be made to the Department of Commerce and Labor.

The publications formerly issued by the Bureau of Foreign Commerce will be issued in similar form by the Department of Commerce and Labor. They are as follows:

I.—COMMERCIAL RELATIONS, being the annual reports of consular officers on the commerce, industries, navigation, etc., of their districts.

II.—REVIEW OF WORLD'S COMMERCE, being a summary of the annual reports contained in Commercial Relations.

III.—CONSULAR REPORTS, issued monthly, and containing miscellaneous reports from diplomatic and consular officers.

IV.—DAILY CONSULAR REPORTS, issued daily, except Sundays and legal holidays, for the convenience of the newspaper press, commercial and manufacturing organizations, etc.

V.—EXPORTS DECLARED FOR THE UNITED STATES, issued annually, containing the declared values of exports from the various consular districts to the United States.

VI.—SPECIAL CONSULAR REPORTS, containing series of reports from consular officers on particular subjects, made in pursuance to instructions from the Department.

Following are the special publications issued prior to 1890:

Labor in Europe, 1878, one volume; Labor in Foreign Countries, 1884, three volumes; Commerce of the World and the Share of the United States Therein, 1879; Commerce of the World and the Share of the United States Therein, 1880–81; Declared Exports for the United States, First and Second Quarters, 1883; Declared Exports for the United States, Third and Fourth Quarters, 1883; Cholera in Europe in 1884, 1885; Trade Guilds of Europe, 1885; The Licorice Plant, 1885; Forestry in Europe, 1887; Emigration and Immigration, 1885–86 (a portion of this work was published as CONSULAR REPORTS No. 76, for the month of April, 1887); Rice Pounding in Europe, 1887; Sugar of Milk, 1887; Wool Scouring in Belgium, 1887; Cattle and Dairy Farming in Foreign Countries, 1888 (issued first in one volume, afterwards in two volumes); Technical Education in Europe, 1888; Tariffs of Central America and the British West Indies, 1890.

The editions of all the above-named publications are exhausted, and the Department is therefore unable to supply copies.

Beginning with 1890, reports on special subjects were published in separate form, entitled SPECIAL CONSULAR REPORTS. There are now the following SPECIAL CONSULAR REPORTS:

Vol. 1 (1890).—Cotton Textiles in Foreign Countries, Files in Spanish America, Carpet Manufacture in Foreign Countries, Malt and Beer in Spanish America, and Fruit Culture in Foreign Countries.

Vol. 2 (1890 and 1891):—Refrigerators and Food Preservation in Foreign Countries, European Emigration, Olive Culture in the Alpes Maritimes, and Beet-Sugar Industry and Flax Cultivation in Foreign Countries.

Vol. 3 (1891).—Streets and Highways in Foreign Countries. (New edition, 1897.)

Vol. 4 (1891).—Port Regulations in Foreign Countries.

Vol. 5 (1891).—Canals and Irrigation in Foreign Countries. (New edition, 1898.)

Vol. 6 (1891 and 1892).—Coal and Coal Consumption in Spanish America, Gas in Foreign Countries, and India Rubber.

Vol. 7 (1892).—The Stave Trade in Foreign Countries and Tariffs of Foreign Countries.

Vol. 8 (1892).—Fire and Building Regulations in Foreign Countries.

Vol. 9 (1892 and 1893).—Australian Sheep and Wool and Vagrancy and Public Charities in Foreign Countries.

Vol. 10 (1894).—Lead and Zinc Mining in Foreign Countries and Extension of Markets for American Flour. (New edition, 1897.)

Vol. 11 (1894).—American Lumber in Foreign Markets. (New edition, 1897.)

Vol. 12 (1895).—Highways of Commerce. (New edition, 1899.)

Vol. 13 (1896 and 1897).—Money and Prices in Foreign Countries.

Vol. 14 (1898).—The Drug Trade in Foreign Countries.

Vol. 15 (1898).—Part I. Soap Trade in Foreign Countries; Screws, Nuts, and Bolts in Foreign Countries; Argols in Europe, Rabbits and Rabbit Furs in Europe, and Cultivation of Ramie in Foreign Countries. Part II. Sericulture and Silk Reeling and Cultivation of the English Walnut.

Vol. 16 (1899).—Tariffs of Foreign Countries. Part I. Europe. Part II. America. Part III. Asia, Africa, Australasia, and Polynesia. Supplement (1900). Tariffs of Chile and Nicaragua.

Vol. 17 (1899).—Disposal of Sewage and Garbage in Foreign Countries; Foreign Trade in Coal Tar and By-Products.

Vol. 18 (1900).—Merchant Marine of Foreign Countries.

Vol. 19 (1900).—Paper in Foreign Countries; Uses of Wood Pulp.

Vol. 20 (1900).—Part I. Book Cloth in Foreign Countries, Market for Ready-Made Clothing in Latin America, Foreign Imports of American Tobacco, and Cigar and Cigarette Industry in Latin America. Part II. School Gardens in Europe. Part III. The Stave Trade in Foreign Countries.

Vol. 21 (1900).—Part I. Foreign Markets for American Coal. Part II. Vehicle Industry in Europe. Part III. Trusts and Trade Combinations in Europe.

Vol. 22 (1900 and 1901).—Part I. Acetic Acid in Foreign Countries. Part II. Mineral-Water Industry. Part III. Foreign Trade in Heating and Cooking Stoves.

Vol. 23 (1901).—Part I. Gas and Oil Engines in Foreign Countries. Part II. Silver and Plated Ware in Foreign Countries.

Vol. 24 (1902).—Creameries in Foreign Countries.

Vol. 25 (1902).—Stored Goods as Collateral for Loans.

Vol. 26 (1903).—Briquettes as Fuel in Foreign Countries.

Vol. 27 (1903).—Markets for Agricultural Implements and Vehicles in Foreign Countries.

Of these SPECIAL CONSULAR REPORTS, Australian Sheep and Wool, Carpet Manufacture, Cotton Textiles in Foreign Countries, Files in Spanish America, Fire and Building Regulations, Fruit Culture, Gas in Foreign Countries, Heating and Cooking Stoves, India Rubber, Lead and Zinc Mining, Malt and Beer in Spanish America, Money and Prices, Paper in Foreign Countries, Port Regulations, Refrigerators and Food Preservation; Sericulture, etc.; Silver and Plated Ware; Vagrancy, etc., are exhausted, and no copies can be supplied by the Department.

Of the monthly CONSULAR REPORTS, many numbers are exhausted or so reduced that the Department is unable to accede to requests for copies. Of the publications available for distribution, copies are mailed to applicants without charge.

Persons receiving CONSULAR REPORTS regularly, who change their addresses, should give the old as well as the new address.

VALUES OF FOREIGN COINS AND CURRENCIES.

The following statements show the valuation of foreign coins, as given by the Director of the United States Mint and published by the Secretary of the Treasury, in compliance with the first section of the act of March 3, 1873, viz: "That the value of foreign coins, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," and that "the value of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the 1st day of January by the Secretary of the Treasury."

In compliance with the foregoing provisions of law, annual statements were issued by the Treasury Department, beginning with that issued on January 1, 1874, and ending with that issued on January 1, 1890. Since that date, in compliance with the act of October 1, 1890, these valuation statements have been issued quarterly, beginning with the statement issued on January 1, 1891.

Attention has been repeatedly called to the fact that the market exchange value of foreign coins differs in many instances from that given by the United States Treasury. An explanation of the basis of the quarterly valuations was asked from the United States Director of the Mint, and under date of February 7, 1898, Mr. R. E. Preston made the following statement:

"When a country has the single gold standard, the value of its standard coins is estimated to be that of the number of grains fine of gold in them, 480 grains being reckoned equivalent to $20.67 in United States gold, and a smaller number of grains in proportion. When a country has the double standard, but keeps its full legal-tender silver coins at par with gold, the coins of both gold and silver are calculated on the basis of the gold value.

"The value of the standard coins of countries with the single silver standard is calculated to be that of the average market value of the pure metal they contained during the three months preceding the date of the proclamation of their value in United States gold by the Secretary of the Treasury. The value of the gold coins of silver-standard countries is calculated at that of the pure gold they contain, just as if they had the single gold standard.

"These valuations are used in estimating the values of all foreign merchandise exported to the United States."

The following statements, running from January 1, 1874, to April 1, 1903, have been prepared to assist in computing the values in American money of the trade, prices, values, wages, etc., of and in foreign countries, as given in consular and other reports. The series of years are given so that computations may be made for each year in the proper money values of such year. In hurried computations, the reductions of foreign currencies into American currency, no matter for how many years, are too often made on the bases of latest valuations. All computations of values, trade, wages, prices, etc., of and in the "fluctuating-currency countries" should be made in the values of their currencies in each year up to and including 1898, and in the quarterly valuations thereafter.

To meet typographical requirements, the quotations for the years 1875–1877, 1879–1882, 1884–1887, 1895, 1897, and 1899 are omitted, these years being selected as showing the least fluctuations when compared with years immediately preceding and following.

To save unnecessary repetition, the estimates of valuations are divided into three classes, viz: (A) countries with fixed currencies, (B) countries with fluctuating currencies, and (C) quarterly valuations of fluctuating currencies.

A.—*Countries with fixed currencies.*

The following official (United States Treasury) valuations of foreign coins do not include "rates of exchange."

Countries.	Standard.	Monetary unit.	Value in U.S. gold.	Coins.
Argentine Republic	Gold and silver	Peso	$0.96,5	Gold—argentine ($4.82,4) and ½ argentine; silver—peso and divisions.
Austria-Hungary*	Gold	Crown	.20,3	Gold—20 crowns ($4.05,2) and 10 crowns.
Belgium	Gold and silver	Franc	.19,3	Gold—10 and 20 franc pieces; silver—5 francs.
Brazil	Gold	Milreis	.54,6	Gold—5, 10, and 20 milreis; silver—½, 1, and 2 milreis.
British North America (except Newfoundland).	do	Dollar	1.00	
British Honduras	do	do	1.00	
Chile	do	Peso	.36,5	Gold—escudo ($1.25), doubloon ($3.65), and condor ($7.30); silver—peso and divisions.
Costa Rica	do	Colon	.46,5	Gold—2, 5, 10, and 20 colons; silver—5, 10, 25, and 50 centisimos.
Cuba	Gold and silver	Peso	.92,6	Gold—doubloon ($5.01,7); silver—peso (60 cents).
Denmark	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Ecuador†	do	Sucre	.48,7	Gold—10 sucres ($4.8665); silver—sucre and divisions.
Egypt	do	Pound (100 piasters).	4.94,3	Gold—10, 20, 50, and 100 piasters; silver—1, 2, 10, and 20 piasters.
Finland	do	Mark	.19,3	Gold—10 and 20 marks ($1.93 and $3.85,9).
France	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany	Gold	Mark	.23,8	Gold—5, 10, and 20 marks.
Great Britain	do	Pound sterling	4.86,6½	Gold—sovereign (pound sterling) and half sovereign.
Greece	Gold and silver	Drachma	.19,3	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti	do	Gourde	.96,5	Silver—gourde.
India‡	Gold	Rupee	.32,4	Gold—sovereign ($4.8665); silver—rupee and divisions.
Italy	Gold and silver	Lira	.19,3	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Japan§	Gold	Yen	.49,8	Gold—1, 2, 5, 10, and 20 yen.
Liberia	do	Dollar	1.00	
Netherlands	Gold and silver	Florin	.40,2	Gold—10 florins; silver—½, 1, and 2½ florins.
Newfoundland	Gold	Dollar	1.01,4	Gold—$2 ($2.02,7).
Peru‖	do	Sol	.48,7	Gold—libra ($4.8665); silver—sol and divisions.
Portugal	do	Milreis	1.08	Gold—1, 2, 5, and 10 milreis.
Russia¶	do	Ruble	.51,5	Gold—imperial ($7.718) and ½ imperial ($3.80); silver—¼, ½, and 1 ruble.
Spain	Gold and silver	Peseta	.19,3	Gold—25 pesetas; silver—5 pesetas.
Sweden and Norway	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Switzerland	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey	Gold	Piaster	.04,4	Gold—25, 50, 100, 200, and 500 piasters.
Uruguay	do	Peso	1.03,4	Gold—peso; silver—peso and divisions.
Venezuela	Gold and silver	Bolivar	.19,3	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

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* The gold standard went into effect January 1, 1900 (see Commercial Relations, 1899, Vol. II, p. 7). Values are still sometimes expressed in the florin, which is worth 2 crowns.

† Gold standard adopted in November, 1900. (See CONSULAR REPORTS No. 225, June, 1899.)

‡ For an account of the adoption of the gold standard, see CONSULAR REPORTS No. 238, p. 359.

§ Gold standard adopted October 1, 1897. (See CONSULAR REPORTS No. 201, p. 259.)

‖ Gold standard adopted October 13, 1900.

¶ For an account of the adoption of the gold standard, see Review of the World's Commerce, 1896–97, p. 254.

B.—*Countries with fluctuating currencies, 1874–1898.*

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1874.	1878.	1883.	1888.	1889.	1890.
Austria-Hungary*.	Silver	Florin	$0.47,6	$0.45,3	$0.40,1	$0.34,5	$0.33,6	$0.42
Bolivia	do	Dollar until 1880; boliviano thereafter.	.96,5	.96,5	.81,2	.69,9	.68	.85
Central America	do	Peso	.96,5	.91,8	....	.69,9	.68	.85
China	do	Haikwan tael	1.61	....	....	....	....	....
Colombia	do	Peso	.96,5	.96,5	.81,2	.69,9	.68	.85
Ecuador	do	do	.96,5	.91,8	.81,2	.69,9	.68	.85
Egypt†	Gold	Pound (100 piasters).	....	4.97,4	4.90	4.94,3	....	....
India	Silver	Rupee	.45,8	.43,6	.38,6	.32,2	.32,3	.40,4
Japan	Gold	Yen	.99,7	.99,7	....	.99,7	.99,7	.99,7
	Silver		....	....	.87,6	.75,3	.73,4	.91,7
Mexico	do	Dollar	1.04,75	.99,8	.88,2	.75,9	.73,9	.92,3
Netherlands‡	Gold and silver.	Florin	.40,5	.38,5	....	....	....	....
Peru	Silver	Sol	.92,5	.91,8	.81,2	.69,9	.68	.85
Russia	do	Ruble	.77,17	.73,4	.65	.55,9	.54,4	.68
Tripoli	do	Mahbub of 20 piasters.	.87,09	.82,9	.73,3	.63	.61,4	.76,7

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1891.	1892.	1893.	1894.	1896.	1898.
Austria-Hungary*.	Silver	Florin	$0.38,1	$0.34,1	....	....	....	....
Bolivia	do	Boliviano	.77,1	.69,1	$0.61,3	$0.51,6	$0.49,1	$0.42,4
Central America	do	Peso	.77,1	.69,1	.61,3	.51,6	.49,1	.41,4
Colombia	do	do	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
Ecuador	do	do	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
India	do	Rupee	.36,6	.32,8	.29,2	.24,5	.23,3	.20,1
Japan§	do	Yen	.83,1	.74,5	.66,1	.55,6	.52,9	....
Mexico	do	Dollar	.83,7	.75	.66,6	.56	.53,3	.46
Peru	do	Sol	.77,1	.69,1	.61,3	.51,6	.49,1	.42,4
Russia§	do	Ruble	.61,7	.55,3	.49,1	.41,3	.39,3	....
Tripoli	do	Mahbub of 20 piasters.	.69,5	.62.3	.55,3	.46,5	.44,3	....

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* See footnote to Austria-Hungary under Table A.

† The Egyptian pound became fixed in value at $4.94,3 in 1887.

‡ The Netherlands florin fluctuated up to the year 1880, when it became fixed at 40,2 cents.

§ See footnote, table of fixed currencies.

C.—*Quarterly valuations of fluctuating currencies.*

Countries.	Monetary unit.	1900.				1901.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia	Silver boliviano.	$0.42,7	$0.43,6	$0.43,8	$0.45,1	$0.46,8	$0.45,1	$0.43,6	$0.42,8
Central America.	Silver peso	.42,7	.43,6	.43,8	.45,1	.46,5	.45,1	.43,6	.42,8
China	Amoy tael	.69,1	.70,5	.70,9	.72,9	.75,7	.72,9	.70,5	.69,1
	Canton tael	.68,9	.70,3	.70,7	.72,7	.75,5	.72,7	.70,3	.68,9
	Chefoo tael	.66,1	.67,4	.67,8	.69,7	.72,4	.69,7	.67,4	.66,1
	Chinkiang tael	.67,5	.68,8	.69,3	.71,2	.74	.71,2	.68,8	.67,5
	Fuchau tael	.64	.65,2	.65,6	.67,4	.70,1	.67,5	.65,2	.64
	Haikwan tael	.70,3	.71,7	.72,1	.74,2	.77,1	.74,2	.71,7	.70,4
	Hankau tael	.64,7	.65,9	.66,3	.68,2	.70,9	.68,2	.65,9	.64,7
	Hongkong tael	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)
	Ningpo tael	.66,5	.67,7	.68,2	.70,1	.72,8	.70,1	.67,8	.66,5
	Niuchwang tael.	.64,8	.66,1	.66,5	.68,4	.71	.68,4	.66,1	.64,8
	Shanghai tael	.63,1	.64,4	.64,8	.66,6	.69,2	.66,6	.64,4	.63,2
	Swatow tael	.63,9	.65,1	.65,5	.67,4	.70	.67,4	.65,1	.63,9
	Takao tael	.69,6	.70,9	.71,4	.73,4	.76,2	.73,4	.70,9	.69,6
	Tientsin tael	.67	.68,3	.68,7	.70,7	.73,4	.70,7	.68,3	.67
Colombia	Silver peso	.42,7	.43,6	.43,8	.45,1	.46,8	.45,1	.43,6	.42,8
Ecuador †	do								
India	Silver rupee‡	.20,3	.20,7	.20,8					
Mexico	Silver dollar	.46,4	.47,3	.47,6	.49	.50,9	.49	.49	.46,4
Persia	Silver kran	.07,9	.08	.08,1	.08,3	.08,6	.08,3	.08,3	.07,9
Peru †	Silver sol	.42,7	.43,6	.43,8	.48,7				

Countries.	Monetary unit.	1902.				1903.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia	Silver boliviano.	$0.41,3	$0.40,3	$0.38,2	$0.38,4	$0.36,1	$0.35,2	$0.38,4	$0.40,8
Central America	Silver peso	.41,3	.40,3	.38,2	.38,4	.36,1	.35,2	.38,4	.40,8
China	Amoy tael	.66,9	.65,1	.61,8	.62	.58,4	.57	.62,2	.65,9
	Canton tael	.66,7	.64,9	.61,7	.61,9	.58,2	.56,8	.62	.65,7
	Chefoo tael	.63,9	.62,3	.59,1	.59,3	.55,8	.54,5	.59,5	.63
	Chinkiang tael	.65,3	.63,6	.60,4	.60,6	.57	.55,7	.60,7	.64,4
	Fuchau tael	.61,8	.60,2	.57,2	.57,4	.54	.52,7	.57,5	.61
	Haikwan tael	.68	.66,3	.62,9	.63,1	.59,4	.58	.63,3	.67,1
	Hankau tael	.62,6	.60,9	.57,9	.58	.54,6	.53,3	.58,2	.61,7
	Hongkong tael	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)
	Nankin tael								.65,2
	Ningpo tael	.64,3	.62,6	.59,5	.59,6	.56,1	.54,8	.58,3	.63,4
	Niuchwang tael.	.62,7	.61,1	.58	.58,2	.53,3	.53,4	.59,8	,61,8
	Peking tael								.64,3
	Shanghai tael	.61,1	.59,5	.56,5	.56,7	.53,9	.52	.56,8	.60,2
	Swatow tael	.61,8	.60,2	.57,1	.57,3	.58,8	.52,6	.57,5	.60,9
	Takao tael	.67,3	.65,5	.62,2	.62,4	.56,6	.57,3	.62,6	.66,3
	Tientsin tael	.64,8	.63,1	.59,9	.60,1	.60,1	.55,2	.60,3	.63,9
Colombia	Silver peso	.41,3	.40,3	.38,2	.38,4	.36,1	.35,2	.38,4	.40,8
Mexico	Silver dollar	.44,9	.43,7	.41,5	.41,7	.39,2	.38,3	.41,8	.44,3
Persia	Silver kran	.07,6	.07,4	.07	.07,1	.06,6	.06,5	.07,1	.07,5

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* The "British dollar" has the same legal value as the Mexican dollar in Hongkong, the Straits Settlements, and Labuan.

† See footnote, table of fixed currencies.

‡ The sovereign is the standard coin of India, but the rupee is the monev of account. See also table of fixed currencies.

FOREIGN WEIGHTS AND MEASURES.

The following table embraces only such weights and measures as are given from time to time in CONSULAR REPORTS and in Commercial Relations:

Foreign weights and measures, with American equivalents.

Denominations.	Where used.	American equivalents.
Almude	Portugal	4.422 gallons.
Ardeb	Egypt	7.6907 bushels.
Are	Metric	0.02471 acre.
Arobe	Paraguay	25 pounds.
Arratel or libra	Portugal	1.011 pounds.
Arroba (dry)	Argentine Republic	25.3175 pounds.
Do	Brazil	32.38 pounds.
Do	Cuba	25.3664 pounds.
Do	Portugal	32.38 pounds.
Do	Spain	25.36 pounds.
Do	Venezuela	25.4024 pounds.
Arroba (liquid)	Cuba, Spain, and Venezuela	4.263 gallons.
Arshine	Russia	28 inches.
Arshine (square)	do	5.44 square feet.
Artel	Morocco	1.12 pounds.
Baril	Argentine Republic and Mexico	20.0787 gallons.
Barrel	Malta (customs)	11.4 gallons.
Do	Spain (raisins)	100 pounds.
Batman or tabriz	Persia	6.49 pounds.
Berkovets	Russia	361.12 pounds.
Bongkal	India	832 grains.
Bouw	Sumatra	7,096.5 square meters.
Bu	Japan	0.1 inch.
Butt (wine)	Spain	140 gallons.
Caffiso	Malta	5.4 gallons.
Candy	India (Bombay)	529 pounds.
Do	India (Madras)	500 pounds.
Cantar	Morocco	113 pounds.
Do	Syria (Damascus)	575 pounds.
Do	Turkey	124.7036 pounds.
Cantaro (cantar)	Malta	175 pounds.
Carga	Mexico and Salvador	300 pounds.
Catty	China	1.333⅓ (1⅓) pounds.
Do*	Japan	1.31 pounds.
Do	Java, Siam, and Malacca	1.35 pounds.
Do	Sumatra	2.12 pounds.
Centaro	Central America	4.2631 gallons.
Centner	Bremen and Brunswick	117.5 pounds.
Do	Darmstadt	110.24 pounds.
Do	Denmark and Norway	110.11 pounds.
Do	Nuremberg	112.43 pounds.
Do	Prussia	113.44 pounds.
Do	Sweden	93.7 pounds.
Do	Vienna	123.5 pounds.
Do	Zollverein	110.24 pounds.
Do	Double or metric	220.46 pounds.
Chetvert	Russia	5.7748 bushels.
Chih	China	14 inches.

*More frequently called "kin." Among merchants in the treaty ports it equals 1.33⅓ pounds avoirdupois.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Coyan	Sarawak	3,098 pounds.
Do	Siam (Koyan)	2,667 pounds.
Cuadra	Argentine Republic	4.2 acres.
Do	Paraguay	78.9 yards.
Do	Paraguay (square)	8.077 square feet.
Do	Uruguay	Nearly 2 acres.
Cubic meter	Metric	35.3 cubic feet.
Cwt. (hundredweight)	British	112 pounds.
Dessiatine	Russia	2.6997 acres.
Do	Spain	1.599 bushels.
Drachme	Greece	Half ounce.
Egyptian weights and measures	(*See* CONSULAR REPORTS No. 144.)	
Fanega (dry)	Central America	1.5745 bushels.
Do	Chile	2.575 bushels.
Do	Cuba	1.599 bushels.
Do	Mexico	1.54728 bushels.
Do	Morocco	Strike fanega, 70 pounds; full fanega, 118 pounds.
Do	Uruguay (double)	7.776 bushels.
Do	Uruguay (single)	3.888 bushels.
Do	Venezuela	1.599 bushels.
Fanega (liquid)	Spain	16 gallons.
Feddan	Egypt	1.03 acres.
Frail (raisins)	Spain	50 pounds.
Frasco	Argentine Republic	2.5096 quarts.
Do	Mexico	2.5 quarts.
Frasila	Zanzibar	35 pounds.
Fuder	Luxemburg	264.17 gallons.
Funt	Russia	0.9028 pound.
Garnice	Russian Poland	0.88 gallon.
Gram	Metric	15.432 grains.
Hectare	do	2.471 acres.
Hectoliter:		
Dry	do	2.838 bushels.
Liquid	do	26.417 gallons.
Joch	Austria-Hungary	1.422 acres.
Ken	Japan	6 feet.
Kilogram (kilo)	Metric	2.2046 pounds.
Kilometer	do	0.621376 mile.
Klafter	Russia	216 cubic feet.
Koku	Japan	4.9629 bushels.
Korree	Russia	3.5 bushels.
Kwan	Japan	8.28 pounds.
Last	Belgium and Holland	85.134 bushels.
Do	England (dry malt)	82.52 bushels.
Do	Germany	2 metric tons (4,480 pounds).
Do	Prussia	112.29 bushels.
Do	Russian Poland	11⅜ bushels.
Do	Spain (salt)	4,760 pounds.
League (land)	Paraguay	4,633 acres.
Li	China	2,115 feet.
Libra (pound)	Argentine Republic	1.0127 pounds.
Do	Central America	1.043 pounds.
Do	Chile	1.014 pounds.
Do	Cuba	1.0161 pounds.
Do	Mexico	1.01465 pounds.
Do	Peru	1.0143 pounds.
Do	Portugal	1.011 pounds.
Do	Spain	1.0144 pounds.
Do	Uruguay	1.0143 pounds.
Do	Venezuela	1.0161 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Liter	Metric	1.0567 quarts.
Livre (pound)	Greece	1.1 pounds.
Do	Guiana	1.0791 pounds.
Load	England (timber)	Square, 50 cubic feet; unhewn, 40 cubic feet; inch planks, 600 superficial feet.
Manzana	Costa Rica	1⅝ acres.
Do	Nicaragua and Salvador	1.727 acres.
Marc	Bolivia	0.507 pound.
Maund	India	$82\frac{2}{7}$ pounds.
Meter	Metric	39.37 inches.
Mil	Denmark	4.68 miles.
Do	Denmark (geographical)	4.61 miles.
Milla	Nicaragua and Honduras	1.1493 miles.
Morgen	Prussia	0.63 acre.
Oke	Egypt	2.7225 pounds.
Do	Greece	2.84 pounds.
Do	Hungary	3.0817 pounds.
Do	Turkey	2.82838 pounds.
Do	Hungary and Wallachia	2.5 pints.
Pic	Egypt	21¼ inches.
Picul	Borneo and Celebes	135.64 pounds.
Do	China, Japan, and Sumatra	133⅓ pounds.
Do	Java	135.1 pounds.
Do	Philippine Islands.	137.9 pounds.
Pie	Argentine Republic	0.9478 foot.
Do	Spain	0.91407 foot.
Pik	Turkey	27.9 inches.
Pood	Russia	36.112 pounds.
Pund (pound)	Denmark and Sweden	1.102 pounds.
Quarter	Great Britain	8.252 bushels.
Do	London (coal)	36 bushels.
Quintal	Argentine Republic	101.42 pounds.
Do	Brazil	130.06 pounds.
Do	Castile,* Chile, Mexico, and Peru	101.41 pounds.
Do	Greece	123.2 pounds.
Do	Newfoundland (fish)	112 pounds.
Do	Paraguay	100 pounds.
Do	Syria	125 pounds.
Do	Metric	220.46 pounds.
Rottle	Palestine	6 pounds.
Do	Syria	5¾ pounds.
Sagene	Russia	7 feet.
Salm	Malta	490 pounds.
Se	Japan	0.02451 acres.
Seer	India	1 pound 13 ounces.
Shaku	Japan	11.9305 inches.
Sho	do	1.6 quarts.
Standard (St. Petersburg)	Lumber measure	165 cubic feet.
Stone	British	14 pounds.
Suerte	Uruguay	2,700 cuadras (see cuadra).
Sun	Japan	1.193 inches.
Tael	Cochin China	590.75 grains (troy).
Tan	Japan	0.25 acre.
To	do	2 pecks.
Ton	Space measure	40 cubic feet.
Tonde (cereals)	Denmark	3.94783 bushels.
Tondeland	do	1.36 acres.

*Although the metric weights are used officially in Spain, the Castile quintal is employed in commerce in the Peninsula and colonies, save in Catalonia; the Catalan quintal equals 91.71 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Tsubo	Japan	6 feet square.
Tsun	China	1.41 inches.
Tunna	Sweden	4.5 bushels.
Tunnland	Sweden	1.22 acres.
Vara	Argentine Republic	34.1208 inches.
Do	Central America	32.87 inches.
Do	Chile and Peru	33.367 inches.
Do	Cuba	33.384 inches.
Do	Curaçao	33.375 inches.
Do	Mexico	33 inches.
Do	Paraguay	34 inches.
Do	Spain	0.914117 yard.
Do	Venezuela	33.384 inches.
Vedro	Russia	2.707 gallons.
Vergees	Isle of Jersey	71.1 square rods.
Verst	Russia	0.663 mile.
Vlocka	Russian Poland	41.98 acres.

METRIC WEIGHTS AND MEASURES.

Metric weights.

Milligram ($\frac{1}{1000}$ gram) equals 0.0154 grain.
Centigram ($\frac{1}{100}$ gram) equals 0.1543 grain.
Decigram ($\frac{1}{10}$ gram) equals 1.5432 grains.
Gram equals 15.432 grains.
Decagram (10 grams) equals 0.3527 ounce.
Hectogram (100 grams) equals 3.5274 ounces.
Kilogram (1,000 grams) equals 2.2046 pounds.
Myriagram (10,000 grams) equals 22.046 pounds.
Quintal (100,000 grams) equals 220.46 pounds.
Millier or tonnea—ton (1,000,000 grams) equals 2,204.6 pounds.

Metric dry measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.061 cubic inch.
Centiliter ($\frac{1}{100}$ liter) equals 0.6102 cubic inch.
Deciliter ($\frac{1}{10}$ liter) equals 6.1022 cubic inches.
Liter equals 0.908 quart.
Decaliter (10 liters) equals 9.08 quarts.
Hectoliter (100 liters) equals 2.838 bushels.
Kiloliter (1,000 liters) equals 1.308 cubic yards.

Metric liquid measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.0388 fluid ounce.
Centiliter ($\frac{1}{100}$ liter) equals 0.338 fluid ounce.
Deciliter ($\frac{1}{10}$ liter) equals 0.845 gill.
Liter equals 1.0567 quarts.
Decaliter (10 liters) equals 2.6418 gallons.
Hectoliter (100 liters) equals 26.417 gallons.
Kiloliter (1,000 liters) equals 264.18 gallons.

Metric measures of length.

Millimeter ($\frac{1}{1000}$ meter) equals 0.0394 inch.
Centimeter ($\frac{1}{100}$ meter) equals 0.3937 inch.
Decimeter ($\frac{1}{10}$ meter) equals 3.937 inches.
Meter equals 39.37 inches.
Decameter (10 meters) equals 393.7 inches.
Hectometer (100 meters) equals 328 feet 1 inch.
Kilometer (1,000 meters) equals 0.62137 mile (3,280 feet 10 inches).
Myriameter (10,000 meters) equals 6.2137 miles.

Metric surface measures.

Centare (1 square meter) equals 1,550 square inches.
Are (100 square meters) equals 119.6 square yards.
Hectare (10,000 square meters) equals 2.471 acres.

MONTHLY CONSULAR REPORTS.

COMMERCE, MANUFACTURES, ETC.

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SCIENTIFIC INVENTIONS AND EXPERIMENTS.

(*From United States Consul-General Hughes, Coburg, Germany.*)

NEW ELECTRIC FURNACE.

A French incandescent furnace, applicable for the production of cast iron, ferrosilicon, ferromanganese, and like substances, consists of a carbon base, refractory walls, a carbon sill, a carbon block, and a shaft for admitting fuel. The current is supplied through the base and block and passes through coke or other fuel with which the furnace is kept filled through the shaft. The ore is supplied over the sill after being highly heated in an adjacent preparatory furnace—in part by the gases escaping from the electric furnace between the sill and block. The sill acts as a short circuit for the current, thereby producing a very high temperature at its inner edges. Tap holes are provided for the metal and slag. In a modification the walls of the furnace are made of carbon up to the ore inlet, the special sill being dispensed with. The conducting block, vertically arranged in the first, is placed here horizontally and provided with a vertical hole, through which the coke descends into the furnace.

ELECTRICAL FURNACE EXPERIMENTS.

An interesting experiment is described by M. Ch. Féry in a recent issue of Le Génie Civil. The experiment, which was made to test the accuracy of an optical pyrometer of his devising, consisted in the fractional distillation of brass in the electric furnace. This furnace took 600 amperes at 80 volts, and with it 11 pounds of copper could be boiled off in six minutes. On charging it with brass containing 37 per cent of zinc the temperature rose in half a minute to the boiling point of zinc, which was found to be about 1,100° C. This temperature remained nearly constant for one minute, which sufficed to get rid of all the zinc, and in two minutes more the boiling point of copper was reached, which was found to be 2,100° C. The copper left in the furnace at the end of the experiment contained barely a trace of zinc and was very nearly pure, though a little carbon was mixed with it in the form of graphite.

The pyrometer used in these experiments is of a very interesting type. It has the advantage that no portion of it is exposed to a really high temperature, its indications being dependent on the fact that the total radiation emitted by a "theoretically black" body varies as the fourth power of the absolute temperature. The interior of any furnace into which there is but a small opening acts as a theoretically black body. M. Féry's method of measuring the temperature, therefore, is to receive the radiation, from a small opening into such a furnace, on a thermopile so shielded that the amount of radiation received is independent, within limits of the distance of the couple from the opening. This thermopile is connected to a D'Arsonval galvanometer, and the temperature is estimated from the observed deflection in the usual way. In cases in which it is impossible to have an opening direct into the furnace, M. Féry builds a small muffle into the wall of the furnace and obtains his temperature readings by pointing his instrument at the interior of this muffle.

BENZINE TESTS.

Benzine is often adulterated with petroleum oil, in which case it gives off a disagreeable and persistent odor. A method of recognizing the fraud consists in placing a small piece of pitch in the suspected benzine, which, when the benzine is adultered, will soon be dissolved, but will color the liquid less on account of the presence of the petroleum oil. To judge with certainty, it is well to examine the benzine by comparison with a type of standard purity (benzol). Benzine can be distinguished from benzol in the following way: Benzine is colored violet by a crystal of potassium iodide, while benzol is colored carmine. If to 2 cubic centimeters of benzine three or four drops of a clear ether solution of sandarach (1–10) are added a persistent cloudiness is produced in the benzine, while with benzol, treated in the same way, the cloudiness will soon pass away. Finally, if the benzol is shaken with a drop of alcohol, it will become clouded, while the benzine will remain clear. To deprive the benzine of its characteristic odor, it is sufficient to let it fall drop by drop into a vessel containing sulphuric acid, which is fitted with an abducent tube carrying the benzine in the form of vapor to a receiver, in which it is condensed as a liquid having the odor of honey. The temperature of the mixture of sulphuric acid and benzine ought to be carried to about 150°.

NEW WIRELESS SYSTEM FOR TRANSMITTING ELECTRICITY.

A new system invented by two Alsatians for the transmission of electrical impulses without wires through the earth consists in both poles of an electric-current conductor being connected to the earth, whereby an electrical induction field is set up around each pole, the extent of which depends on the intensity of the current employed. In each of these two induction fields it is possible to utilize the electrical impulses produced at the place of generation by the introduction of two poles at suitable points within one of these fields. Relays, such as are well known in telegraphy and telephony, may be employed in order to transmit the electrical impulses over a wider area, these being connected to the two poles and their resulting currents being used to generate further fields. The inventors claim to transmit by means of their system telegraphic, telephonic, or any other desired electrical impulses, the transmission not being subject to outside influences, such as bad weather, storms, etc.—factors which render the wireless transmission of electrical impulses through the air more or less unreliable.

SUPERHEATED STEAM FOR TURBINES.

The theoretical advantages of superheated steam have been fully realized for some time, but practical difficulties connected with its use in engines of the piston and cylinder type have so far debarred its general use. Notwithstanding all the efforts made to insure high steam economy during fully fifty years, there is at the present time no vessel of importance fitted with superheaters. A series of interesting trials upon a turbine of the De Laval type has recently been conducted at Dresden, and the results are embodied in a contribution to a German technical paper. The tests have continued during the past two years upon a 30-horsepower De Laval turbine in the laboratory with steam of 500° C. superheat. The consumption of steam was accurately determined by condensing all the steam which passed through the turbine. Heat losses were provided against as fully as practicable by jacketing the apparatus. The turbine was arranged to be run at a speed of 20,000 revolutions per minute, reduced by gearing to 2,000 revolutions of the shaft upon which the brake was placed. The machine was operated by steam of a pressure of 6 kilograms per square centimeter (13.23 pounds per 15.5 square inches), and when exhausting against the pressure of the atmosphere was rated to develop 30 horsepower. An interesting feature of the tests is the use of various nozzles, experiments having been made with diverging and conveying nozzles, using bronze and steel as materials. Broadly speaking, the results show a notable economy in steam consumption. The diverging nozzle gives better results than the converging type, and steel was found a more advantageous material than bronze.

OLIVER J. D. HUGHES,
COBURG, GERMANY, *August 31, 1903.* *Consul-General.*

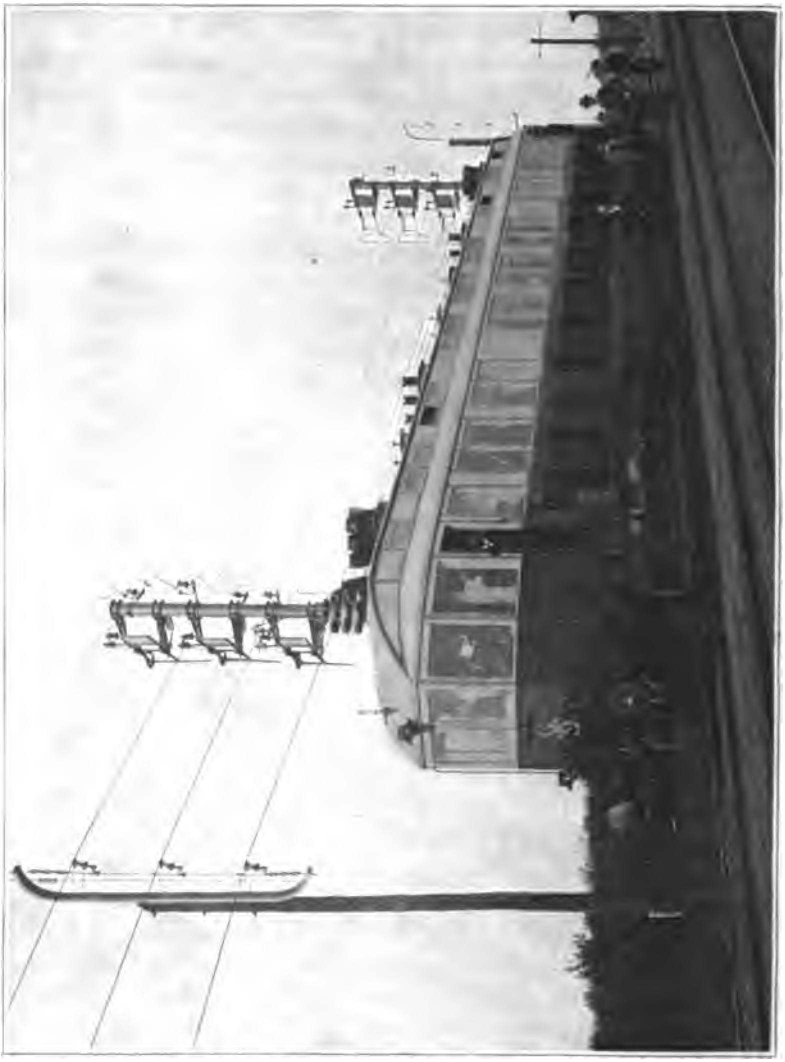
HIGH-SPEED ELECTRIC TRACTION AT BERLIN.

(*From United States Consul-General Mason, Berlin, Germany.*)

In a series of reports from this consulate (ADVANCE SHEETS Nos. 1103, 1154, and 1206) it was explained that in October, 1899, there was organized at Berlin a corporation, with a capital of 750,000 marks ($178,500), entitled the "Company for Experiments in Electric High-Speed Railways," which included among its members several leading bankers, machine builders, and electrical companies, including Messrs. Siemens & Halske and the General Electric Company of Berlin; that the Prussian railway administration put at the disposal of the company a stretch of straight, nearly level track 23 kilometers (14.29 miles) in length, from Marienfelde to Zossen, on the triple-tracked military line which leads southward from Berlin. The westward track of the three, which was laid with ordinary steel rails weighing 69 pounds to the meter, was chosen for the use of the experimenters. It was surfaced, ballasted, and put in perfect repair and stout posts set at intervals of 100 feet throughout its length, on each of which was set a perpendicular steel bow, the chord of which sustained three insulators, on which were strung three parallel lines of heavy copper trolley wire, connected from Marienfelde with the electrical power station at Oberschönweide, on the River Spree, about 5 miles distant. Motor cars for the experiments were built by Messrs. Siemens & Halske and the General Electric Company, respectively, which were tested during October and November, 1901, with a three-phase alternating current of 10,000 to 12,000 volts, which was reduced by transformers carried under the floor of each car to an average pressure of 1,500 volts and in that condition turned into the motors, of which each car carried four—two at either end—with an aggregate energy of 1,000 horsepower. The net result of the trials of that year was that motors, cars, and transmission apparatus worked to the entire satisfaction of the experimenters, and the speed was gradually increased from

90 kilometers (55.9 miles) to 150 kilometers (93.2 miles) per hour, at which pace the track began to yield to the enormous strain, so that the experiments were suspended on the 8th of November. Everything except the rails and roadbed had met all reasonable expectation, and no unpleasant effects had been experienced by those on board which would disqualify high velocities for future passenger traffic.

During the twenty-two months that have elapsed since the close of the first experiments the track from Marienfelde to Zossen had been taken up and relaid with new steel rails weighing 41 kilograms (86.1 pounds) per lineal meter, resting on heavy spruce ties 22 inches from center to center and heavily ballasted with broken basalt. The rails are set on each tie in a steel chair, strongly bolted down, and are joined perpendicularly by beveled joints, 7 inches in length, held firmly together by bolts passing horizontally through the fish plates, so that the effectiveness of a continuous rail is practically secured. The old light rails, which had failed in 1901 and were therefore taken up, have been laid down flat as guard rails, resting horizontally on special cast-iron chairs in such a way that the flat bottom flange of the rail stands vertically along the inside line of each heavy rail and about 2 inches distant from the inner edge of its face. The track is a nearly level air line throughout its length, except one curve of 2,000 yards radius near its southern extremity, and is in all respects up to the highest standard of modern railway construction. The motors have been likewise improved in various minor details, but the cars are substantially the same as when first constructed, and, as represented by the illustration (p. 600), may be briefly described. Each is 22 meters (72.18 feet) in length and weighs 90.5 metric tons, or about 200,000 pounds avoirdupois. Of this weight 48 metric tons comprise the body and running gear and 42.5 tons are made up by the motors, transformers, and other details of the electrical equipment. Each end of the car rests on a six-wheeled bogie truck of the American type, and the motors are four in number, one attached to the front and rear axle of each truck, the middle pair of wheels in each group running free. The wheels are 49 inches in diameter and are equipped with pneumatic brakes of the standard type. The transformers, which are hung beneath the middle section of the car, weigh 12 tons, besides which a storage battery of 631 pounds weight supplies the current for lighting purposes. The interior of the car is provided with upholstered seats lengthwise along the sides, and an open railing incloses at each end the space occupied by the driver, who, standing behind a curved front of plate glass



HIGH-SPEED MOTOR CAR (SIEMENS & HALSKE), 117.38 MILES PER HOUR.

within easy touch of volt and ampere meters, gauges which show the resistance of the air, and a dial that indicates and registers the speed, controls its movements by turning a pilot wheel.

The present series of trials began on September 15, where those of 1901 had ended, with a speed of 150 kilometers (93.2 miles) an hour, which has been gradually increased until yesterday (September 26), when the car built by Messrs. Siemens & Halske ran for miles at the unprecedented rate of 189 kilometers (117.32 miles) an hour—a small fraction under 2 miles per minute. The three-phase current from the power station registered 13,500 volts, and every part of the installation—transformers, motors, car, track, and recording instruments—worked to perfection; the swaying movement was scarcely noticeable, and, according to the verbal reports of those who were privileged to make the two trial trips from Marienfelde to Zossen and return, no discomfort from vibration, wind pressure, or other cause was experienced in greater degree than on an ordinary express train of the D class* in Germany.

Careful examination since the trial fails to detect any sign of failure or deterioration in track, car, or transmission system, so that it is hardly too much to assume that the technical problem of electric-traction speed up to 100 miles and more per hour is successfully solved for all localities where straight and reasonably level and well-guarded railway lines can be provided.

These experiments show that the trolley-line voltage can be easily transformed on the motor car; while another series of tests now in progress on another line (described in a report dated August 27, 1903) have proven that a single-phase alternating current of 6,000 volts can be carried to long distances along one small wire and used directly in a new high-voltage induction motor without transformation. Upon these two demonstrations, which the electricians of Berlin have made within a single month, will be based, more or less directly, future progress in high-speed traction, which becomes henceforth a commercial question, the technical difficulties of which have been, or certainly soon will be, successfully overcome.

The tests at Zossen show that with properly constructed track and car, high velocities are not only possible, but free from discomfort to passengers. The experiments at Oberschönweide show that the complications entailed by overhead wiring for polyphase currents, as well as the weight and cost of transformers, may be eliminated by the use of high-voltage, single-phase apparatus. It remains to be demonstrated to what extent the speed of public travel can be accelerated between large cities and through populous districts under conditions which will command public confidence and patronage.

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*The D class is one in which the cars have a passage down the middle and doors at the ends, as distinct from the ordinary European car that opens at the side.

The outward results of these experiments are to all appearances complete in their success, but their economics—the relation of cost to service rendered—are not yet disclosed. It remains only to be demonstrated to what limit high-speed transit is demanded by public utility and will therefore be financially profitable in actual practice.

FRANK H. MASON,
Consul-General.

BERLIN, GERMANY, *September 29, 1903.*

ELECTRIC DISTANCE PRINTING.

(From United States Consul-General Guenther, Frankfort, Germany.)

It is reported from Berlin that the city of Berlin will soon have a new means of communication in the electric-distance-printing apparatus (Ferndrucker), which in many cases will be a valuable adjunct to the telephone.

Through a contract with the Post-Office Department, of which the telegraph and telephone system is a part, the Ferndrucker Company is able to establish a special service for subscribers in Berlin and its suburbs, who can exchange communications in printed type by way of the main telegraph office. The apparatus is similar to a typewriting machine. After connection is made communication can be had by simply manipulating the machine like a typewriter; even if the addressee is absent the printing goes on automatically on tape. The text of the message is duplicated on the machine of the sender, so that a correct record is kept and mistakes in transmission are avoided. A great advantage of this new apparatus is that by a simple arrangement the communication can be sent simultaneously to a number of addressees. In this manner, for instance, a person is enabled to communicate with all the newspapers of Berlin by a single writing of the message on his sending apparatus.

Large industrial establishments, banks, and newspapers will be greatly benefited and a large number of such have already made application for membership. For the time being, however, the number will be restricted, with a view to increasing it in time.

The telegraphic service by this innovation will also be facilitated, as the main telegraph office can at once transmit all incoming telegraphic messages to any of the Ferndrucker subscribers over the new apparatus.

The giving of a special address—as, for instance, "Smith, Ferndrucker, Berlin"—suffices to have telegraphic messages from anywhere transmitted at once to the residence of the subscriber.

The apparatus has already been in use by a limited number of firms and so far has worked faultlessly. The annual subscription price for Berlin is 500 marks ($119).

RICHARD GUENTHER,
FRANKFORT, GERMANY, *September 5, 1903.* *Consul-General.*

FUEL TESTING IN SWITZERLAND.

(From United States Consul Lieberknecht, Zurich, Switzerland.)

Switzerland produces no coal, and therefore all fuel, coal as well as briquettes, must be imported. This costs annually from $11,580,000 to $13,510,000, which for a country of only 3,000,000 inhabitants means a heavy outlay.

None of the rivers emerging from Switzerland being navigable, fuel must be transported by rail. This naturally makes fuel in this country very expensive, hence it does not pay to import any but the very best qualities of coal.

In order to make the best of the sums sent out of the country for this purpose, a committee, consisting of representatives of the leading industries and railways of the country, has advised the Government to create a federal testing station for fuel, in conjunction with an institute for study and research in theoretical and applied thermochemistry. In the first place, the testing station is intended to examine all kinds of fuel used in Switzerland—solid, liquid (naphtha and petroleum), and gaseous (water gas, Dowson gas, etc.). The examination is to include the chemical investigation, the determination of the heat-producing power, and the power of evaporation of the different kinds of fuel in the market. Briquettes are also to be ested with regard to their stability at ordinary temperature and in the heat.

As an institution of learning the station is to train students in sampling fuel and teach them the various methods for testing the same. The research work will comprise a comparative study of all apparatus and methods for the determination of heats of combustion and of the other properties of combustibles; and scientific research in heat, theoretical and applied thermochemistry.

The aim of the fuel-testing station will be:

1. The determination of the relative value of different kinds of fuel for the Swiss market.

2. The enlightenment of the public through periodical publications on the subject.

3. The imparting to inquirers of information concerning the properties of any kind of fuel sold in the country.

4. The exploration of new sources of fuel for Switzerland.

5. A reform of the whole coal trade, substituting for weight price its heat-producing value.

The station will be annexed to the Federal Polytechnicum, the main institution for technical instruction in this country. The Government will provide for the necessary buildings, machinery, and appliances, and by annual appropriations will enable the station to serve the public at very cheap rates.

As the value of every combustible consists in its heat-producing power, the propagation among the people of knowledge respecting the latter will tend to exclude the inferior qualities of fuel from this country and replace them by better ones.

The originator of the scheme presented above, which has already been approved by the federal authorities, is an American, Dr. E. J. Constam, from New York, at present professor of chemistry in the Federal Polytechnicum at Zurich and consulting chemist to the Swiss railways, who for years has been at the head of a laboratory testing coals and briquettes for railways and industrial establishments.

In view of the possibility of Switzerland becoming a market for American coal, I have deemed it advisable to report upon this subject.

A. LIEBERKNECHT, *Consul.*

ZURICH, SWITZERLAND, *August 20, 1903.*

CALCIUM CARBIDE FOR SUBMARINE BOATS.

(*From United States Consul-General Guenther, Frankfort, Germany.*)

The Cologne Gazette states that the peculiar property of calcium carbide of rapidly developing acetylene gas, when brought in contact with water, has led to its utilization as an effective means for raising and sinking submarine boats. The boat is supplied with an ordinary gas generator and a water tank, whose contents serve as ballast.

The upper part of the tank is connected with the gas reservoir of the generator by a pipe, so that gas can escape into the tank. The tank and the generator have pipes at the bottom opening into the sea water. The upper parts have vertical pipes for the escape of the gas.

If the reservoirs (the tank and the reservoir of the generator) are filled with water, the boat sinks.

After the introduction of a carbide cartridge into the gas generator an immense quantity of gas is formed at once, which forces the water through the lower pipe into the sea. After opening the cock in the connecting pipe, the gas enters the tank and fills it by forcing out the water. The boat now rises to the surface, remaining there until the gas is allowed to escape from both reservoirs, which causes them to be again filled by sea water.

If the boat has sunk deeper than desired, the introduction of a sufficiently large carbide cartridge into the generator will make the boat rise to the proper level. The apparatus is quite simple and works reliably, doing away with air and water pumps.

RICHARD GUENTHER,

FRANKFORT, GERMANY, *August 19, 1903.* *Consul-General.*

NEW GERMAN ELECTRIC PUMP.

(*From United States Consul-General Hughes, Coburg, Germany.*)

The old pumping system employed at the Kaiserstuhl II mine at Dortmund was sufficient to raise 4 cubic meters (141 cubic feet) of water per minute to a height of 300 meters (975 feet), though with great trouble. The present condition of the mine necessitates the raising of 8 cubic meters (282 cubic feet) of water per minute, and steam pumps not being practicable at such a depth, particularly as the shafts are timbered, an electric pumping system was adopted. The pump has three cranks, and at 75 revolutions per minute can raise 5 cubic meters (176 cubic feet) of water to a height of 400 meters (1,300 feet). The pump is driven directly by a three-phase induction motor, rated at 570 horsepower. The motor, which has a diameter of about 10 feet, has star-connected windings, the outer terminals being carried to slip rings. A rheostat is provided for starting the motor. The stator is made in two parts and is supported upon two six-arm spiders from the main bearings. The motor operates at 1,900 volts and 22½ cycles per second, and when running without load absorbs 62 amperes, corresponding to 16 kilowatts. At normal load 170 amperes are required. The power factor is 82 per cent, the efficiency 92 per cent, and the slip 2.7 per cent. The generating station contains two alternators, one of 840 and one of 140 horsepower, both three phase. The exciting current is furnished by an independent dynamo driven by a separate engine. The efficiency of the alternator at 55 per cent of full load is stated to be 93.4 per cent and 94 per cent at full load. The second is used for all purposes when the large one is shut down. The two machines may be worked in parallel, and the station includes a modern high-voltage switch board. The motor is located in a chamber in the mine.

OLIVER J. D. HUGHES,

COBURG, GERMANY, *September 9, 1903.* *Consul-General.*

DEPTHOMETER.

(From United States Consul Waterman, Dublin, Ireland.)

The following is a description of a depthometer recently patented by Mr. Leonard Murphy, of Dublin, and which is now being made here by Daniel Miller & Co.

The depthometer is an instrument designed to show the depth of liquids either in open vessels—such as water tanks, vats, ship's holds, wells, etc.—or of liquids inclosed in vessels under any degree of pressure, as in the case of petrol tanks in some motor cars and other vessels of this kind.

The depthometer has many advantages in its simplicity, accuracy, ease in fixing, and freedom from any outlay whatever for upkeep. It may be placed at a distance from, and at any level relative to, the tanks—above, below, or on a level with them. Any number of tanks may be connected to one depthometer and the depth of each ascertained by indicating one at a time. The reading of the indicating column of the depthometer is absolute, marking to a fraction of an inch the depth of the liquid being indicated. The reading can of course be reduced proportionately by using mercury or other heavy liquid for the indicating column. No floats or moving parts are used in the vessels being indicated, a fixed pipe of small bore being all that is required.

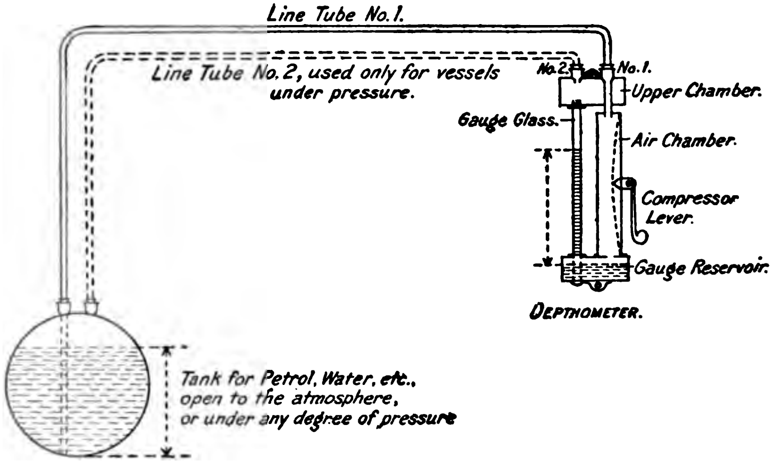

Line Tube No. 1.
Line Tube No. 2, used only for vessels under pressure.
No. 2
No. 1.
Upper Chamber.
Gauge Glass.
Air Chamber.
Compressor Lever.
Gauge Reservoir.
Depthometer.
Tank for Petrol, Water, etc., open to the atmosphere, or under any degree of pressure

Diagram showing the depthometer indicating the depth of liquid in a distant vessel.

The diagram shows the depthometer attached to a tank containing liquid. The instrument, shown in section, is placed somewhat above the tank and registers the exact depth of liquid in the tank by means of the column of liquid seen in the gauge glass. When wishing to ascertain the depth of liquid in the vessel connected, it is merely necessary to raise the lever marked "compressor lever" and bring it back again to its starting point. On doing this the exact depth being measured will be shown by the column in the gauge glass of the depthometer.

The parts of the depthometer shown in the diagram are as follows: Two chambers, fixed one above the other, are connected by a gauge-glass tube, open at both ends, which reaches almost to the bottom of the lower chamber and only just enters the upper chamber from beneath. The upper is called the "upper chamber" and the lower chamber is called the "gauge reservoir." The latter has attached to its top a flexible "air chamber" capable of being enlarged or reduced in area by the compressor lever shown in the diagram. To the upper part of the air chamber a short tube and coupling is attached, from which the line tube (No. 1) can be carried to the distant vessel. The line tube may be bent in any way convenient for fixing and should finish at the top of the tank, where it is attached to a dip pipe, the open end of which reaches to the bottom of the tank.

If the vessel be under pressure a second line tube (No. 2) is necessary and is laid beside the first tube, reaching from the top of the tank to upper chamber of coupling No. 2, as shown in dotted lines on the diagram. This pipe is, however, not used if the vessel be open to the atmosphere, and in that case coupling No. 2 is left open to the air.

The gauge reservoir is next almost filled with the indicating fluid (petrol, water, etc.), and when at rest the liquid should just appear at the base of the visible portion of the gauge glass. The instrument is then ready for use.

The method of working is as follows: Raise the compressor lever to its highest point, thus causing the air chamber to expand and take in a supply of air; the latter enters at coupling No. 2, passes through the upper chamber, down the gauge glass, through the liquid in the gauge reservoir, and finally reaches the air chamber. On depressing the lever the air in this chamber becomes compressed and presses on the liquid in the gauge reservoir. The air can not, however, return through the gauge glass, as the end of the latter is sealed by the indicating liquid. Some of the air, therefore, passes into the line tube No. 1, and on reaching the tank forces out any liquid which may have risen in the dip pipe, and ultimately the excess of air escapes from the open end of the dip pipe into the liquid in the tank.

During this operation the liquid column in the gauge glass of the depthometer will be seen to rise gradually to a certain point and then stand. The column ceases to rise farther the moment the air commences to escape at the open end of the dip pipe in the tank, and the column thus shown will be equal in height to the depth of the liquid in the tank, as it will be seen that the air, having completely filled the line tube, has created an exact balance between the column of liquid in the tank and the indicating column of the depthometer.

In the case of chemical industries it might sometimes be desirable to use the second line tube No. 2, even when the vessel being indicated is not under pressure, as this tube enables the depthometer to draw its supply of air or gas from the top of the vessel and obviates the necessity of adding air where the latter might not be suitable. It also prevents an increase of pressure when using the instrument, as no outside air would then be added, a small quantity of the inclosed gases being merely circulated in the depthometer.

RUFUS WATERMAN, *Consul.*

DUBLIN, IRELAND, *August 31, 1902.*

AUTOMATIC STOKING.

(From United States Consul-General Hughes, Coburg, Germany.)

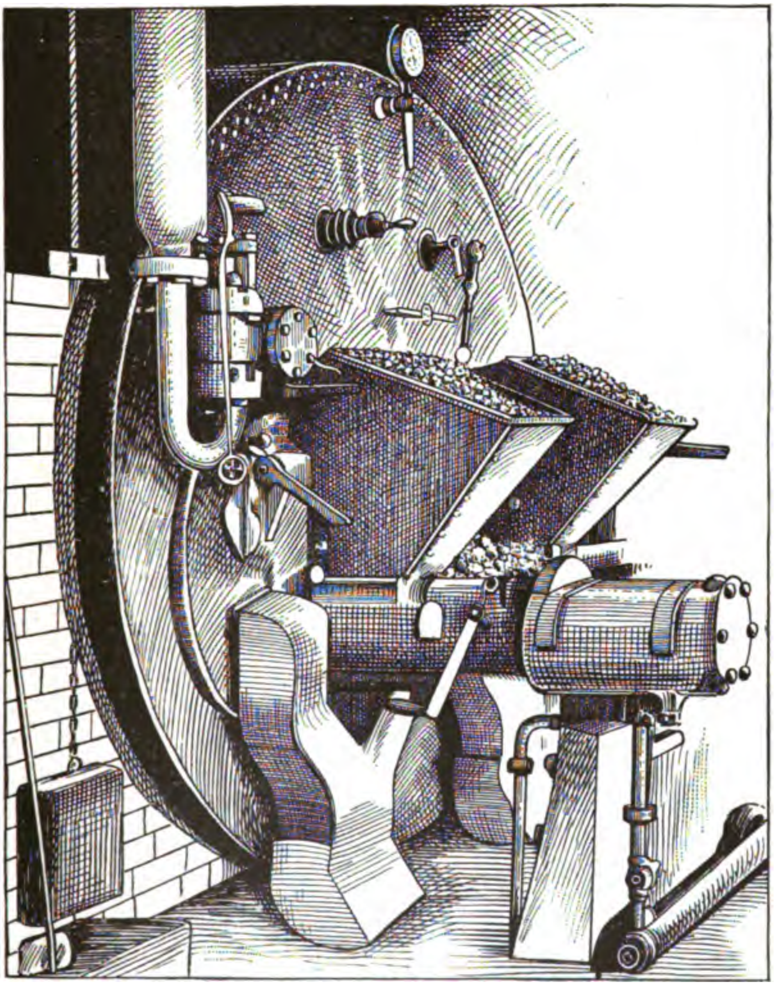
Mechanical stoking of steam boilers has long been sought after as a necessity, so as not only to save labor but to secure more perfect combustion of the fuel. Many appliances for that purpose have been devised, but these have not brought about the result expected. Now, however, in Erith's underfeed stoker we see an arrangement of simple mechanism which seems to fulfill all that could be desired.

As its name implies, this appliance does not take the coal in the usual way and work it forward into the furnace. In this case no fire bars are required; the coal is simply pushed into the position where it is to be most effectively burned, and is fed forward and upward by the intermittent thrust of a steam ram in front.

They work, by an ingenious arrangement, automatically, and as they act only once every one to three minutes their consumption of steam must be merely nominal. Of course, their operation can be adjusted to serve any desired rate of combustion.

From the fact that there are no moving parts in contact with the fire it must be obvious that this system of fire feeding will require little attention in the way of repairs. The method of burning the coal is also in accordance with science. It passes through the coking stage before it is finally burned. This not only serves to take the greatest possible efficiency from the fuel, but it insures combustion free from smoke.

The admission of air can also be so adjusted as to supply only just as much as is required, and little or nothing more. I do not think it is possible by any other system of combustion to regulate so perfectly the admission of air with so close an approach to theoretical requirement.



AUTOMATIC STOKING.

Erith's Engineering Company, 70, Gracechurch street, London, have got possession of this automatic stoker as a specialty, and as it is certain to come largely into use, it will effect that great improvement in smoke consumption and fuel economy which has been so long desired.

OLIVER J. D. HUGHES,

COBURG, GERMANY, *August 24, 1903.* *Consul-General.*

NEW GERMAN RED-PHOSPHORUS MATCH.

(*Prepared in the Bureau of Statistics, Department of Commerce and Labor.*)

By a law of May 10, 1903, Germany forbade the use of white phosphorus in the making of matches. A new material, made of nonpoisonous red phosphorus and chlorsaures kali, has been bought by the Government and is to be substituted in its works for the deleterious and oftentimes more dangerous white phosphorus. A commission of experts appointed by the Government to consider the matter of allowing or forbidding the use of white phosphorus and of buying the right to manufacture the new material defends itself against the claim that the new material, which lights at a point about 100° Réaumur (160° to 180° Cel.), is of little more value than the white phosphorus match-making material, which lights at 50° to 80° Cel. In spite of its high igniting point, the new material may be lighted by scratching on almost any material—sandpaper, bricks, boards, soles of shoes, rough clothing, etc. Great gain attaches to the fact that it does not ignite easily, hence removing or minimizing the danger from fire. How important this is appears when one is reminded of fires caused by the ignition of white phosphorus matches by the sun's rays. In regard to danger to employees, the commission says explosions are practically impossible with the new material.

Then, again, the fact that the new material contains only 15 per cent of lead, while all others contain from 18 to 45 per cent, is in its favor. Matches made of the new material in 1898, when the Government first bought the rights thereto, were found to be as good in 1903 as they were when made. The prices of production are interesting. The new kind cost 6.3 marks ($1.50) per 100,000 matches for the cheapest and 8.10 marks ($1.93) for the dearest. The prices of the others run between 60.50 and 68.20 marks ($14.40 and $16.23).

NEW STEEL PROCESS.

Under date of September 1, 1903, United States Consul Marshal Halstead, of Birmingham, England, transmits the following from the London Daily Mail of August 24, 1903:

REMEDY FOUND FOR HIDDEN DEFECTS.

After much research and repeated experiments in the treatment of steel it is believed that a result has been attained which will prove of international importance.

It is now clearly demonstrated that dangerously brittle steel can be restored to sound material by a simple process of reheating. That is not in the nature of a wonderful discovery; it is merely the definite affirmation of a fact which for some years has been suspected, but with the knowledge of the latest process manufacturers can now make the material which they produce at least reliable.

Many accidents on land and sea are caused by the breakdown of parts of machinery composed of what is technically known as dangerously crystalline steel. Hitherto this hidden defect has been regarded as inevitable, but in future a remedy can be applied.

This means more than a trade improvement; it is a distinct gain to all people who travel in trains and steamships or who are in any way dependent for safety upon the working of machinery. For that reason it is stated that the Board of Trade will require all manufacturers to adopt the process of reheating.

For a long time manufacturers in all countries have been at work with what is known as the heating treatment of steel. Now Mr. J. E. Stead, brother of the journalist, and Mr. Arthur W. Richards—both eminent metallurgists—are to read an important paper on the subject at the forthcoming meeting of the Iron and Steel Institute.

A recent demonstration at a meeting of civil engineers led Mr. Stead to conclude that 99 per cent of the steel which was formerly thrown on the scrap heap could be restored. So he promptly advised all manufacturers to reheat all forgings and so preclude any possibility of danger.

MERCERIZED-COTTON EXPERIMENTS.

(*From United States Consul-General Hughes, Coburg, Germany.*)

Mercerized cotton is now employed in Germany in the manufacture of furniture stuffs and tapestries as a substitute for silk or mohair. A drawback is that the light and brilliant shades necessary for these goods fade, as a rule, rather quickly, particularly in the sun. Believing that the destruction of the coloring matter by light is due either to an oxidizing action or to a reducing action, a writer in the Zeitschrift für Farben und Textilchemie steeped a series of dyed patterns in a large variety of solutions and examined the fastness of the samples thus prepared. The following are some of the conclusions that were arrived at:

The resistance to light is the same whether the shade is produced on mercerized or on unmercerized cotton. There is no difference from this point of view between two samples dyed to an equal depth of shade, one on ordinary and the other on mercerized cotton. This conclusion absolutely contradicts everything that has been said on the subject.

Steeping in saline solutions has absolutely no effect on the basic colors which are not particularly fast to light.

In the case of the direct colors treatment in hyposulphite of soda or the sulphates of copper, nickel, or cobalt considerably increases the fastness or resistance to light. Whereas the sulphate of copper, nickel, or cobalt slightly modifies the shade, especially when it is not very deep, hyposulphite of soda has no influence on the lightest shades, even when it is used in molecular proportions with nickel and cobalt. The mixture, of course, must be colorless.

OLIVER J. D. HUGHES,
COBURG, GERMANY, *September 3, 1903.* *Consul-General.*

COLOMBIAN RAILWAY CONCESSION TO AMERICANS.

(*From United States Consul-General Snyder, Bogotá, Colombia.*)

A new concession has been granted by the Department of Antioquia to two Americans—Messrs. J. T. O'Bryan and Charles L. Wright—for the construction of a railroad connecting its capital, Medellin, with the lower reach of the Magdalena River and with the Department of the Cauca. The concession has yet to be approved by the Central Government.

Medellin, notwithstanding its very difficult position for access, is by far the richest city commercially in the country.

The projected line runs from St. Lucia, a town on the Cauca River, along the River Porce to Medellin, a distance of 180 miles, with a 2 per cent maximum grade. The railroad is then to continue along the same valley to the head of the Porce, in the district of Caldas, 12 miles from Medellin, and to a termination on the frontier of the Department of Cauca.

The advantages of such a line would be very great, as Antioquia would be given the outlet it has so long desired and which it so badly needs. At present it requires a mule journey of three days to reach the terminus of the present existing Antioquian Railroad, which connects with the port of Puerto Berrio, on the Magdalena River.

This is the remainder of the old Punchard-McTaggart scheme to connect Medellin with the Puerto Berrio. However, the proposed line is regarded as much better for two reasons—the Puerto Berrio scheme has engineering difficulties which would render the construction and maintenance difficult and costly, while the present scheme, it is said, has practically no serious engineering obstacles to surmount.

The thing of greatest importance in comparing these two lines is the matter of the river traffic. The general opinion is that the water supply of the Magdalena is gradually diminishing, and while the causes are not clear it is evident that the navigation of the river now presents difficulties which were quite unknown fifteen years ago. There are times in the dry season when the navigation is possible only for the smallest vessels, lightly loaded, and then three weeks have been required to make the trip from the coast to Puerto Berrio and Honda.

The new railroad terminates at St. Lucia, on the Cauca—an easily navigable river flowing into the Magdalena, not a great distance from its mouth.

If carried out, this scheme will give an easy outlet for the trade of the Department of Antioquia, the business center of Colombia.

The proposed Buenaventura route, of which I will write later on, seems to compete with this route, but it is a question whether they will act as competitors or whether the two will work to the advantage of both in establishing a network of communication converging from the capital on the one side westward through the coffee regions of Cundinamarca, the pastoral, industrial, and rich districts of the Tolima and Cauca, and from the other side drawing to itself all the commerce of Medellin, Manizales, and other business centers of Antioquia, together with its rich mineral resources, and find a common outlet through the port of Buenaventura.

A summary of the clauses in the concession is as follows:

The concessioners to construct a railroad from St. Lucia, on the frontier of the Department of Cauca, to the frontier of Bolivar.

The concessioners to have a zone of land along the line of the railway up to 50 meters (164 feet) wide, this zone to belong absolutely to said company—free, if the lands be waste; to be bought by concessioners, if private property.

All necessary articles to be introduced free of duty, including such things as medicine, victuals, etc., required by the company.

Concessioners may establish telephone and telegraph lines.

Concessioners allowed, with permission of the Government, to transfer their contract to another person or company, but not to a foreign government.

Concession granted for fifty years, after which Government has option of purchasing undertaking at a fixed valuation or of continuing concession for twenty-five years, and so on.

Fixes tariff in gold.

On acceptance of contract, concessioners to give bond for not less than £10,000 ($48,665).

This contract may lapse at any time through neglect or failure to carry out any of the obligations of the concessioners or of those who may succeed them. The lapse may be declared ministerially, in which case the undertaking, with all its purtenances, will pass into the hands of the Government. In case of this it is provided that the concessioners or their successors shall receive an indemnity from the Government for such sum as may have been invested in the undertaking.

All differences arising over the interpretation of this contract to be decided by tribunals of arbitration constituted in conformity to laws of Colombia.

Distance between rails, 949 millimeters (3.11 feet); maximum gradient not to exceed 3 per cent nor radii of the curves to be less than 70 meters (229.6 feet); etc.

ALBAN G. SNYDER,
Consul-General.

BOGOTÁ, COLOMBIA, *August 17, 1903.*

NEW TRADE OPENINGS ABROAD.

(*Condensed in the Bureau of Statistics, Department of Commerce and Labor, from foreign consular reports.*)

Electric lighting.—It is suggested that Thorshavn, in the Faroe Islands, should be provided with electric lights. The water power is abundant for nine months of the year and during that period it is so dark that artificial light is necessary. Petroleum lamps are generally used in the shops and houses and for street lighting; this could all be advantageously replaced by electric lighting during the season that lights are most needed. During the months of May, June, and July, when the streams are the lowest, no lights would be needed, as it is daylight constantly.

Gas engines.—Low gas motors are being employed in Russia as a result of the cheapness of the anthracite from the southern coal basins. The gas of blast furnaces is also being utilized by these motors. A large number of 1,000-horsepower machines on the "Durtz" system have been imported. Naphtha, petrol, and benzine motors are also regarded as worthy of attention.

Nitrate of soda.—A recent report from Bilbao states that there is a very strong possibility of the import trade in nitrate of soda and sulphate of ammonia for agricultural purposes being considerably increased, owing to the efforts to improve the methods of cultivation in Spain. About 4,000 tons of nitrate are used every year at Bilbao in the production of acids and chemical manure. During 1902 16,389 tons of chemical products were imported into Bilbao, as follows: From Great Britain, 6,158 tons; America, 3,228 tons; Germany, 1,807 tons; and France, 683 tons; etc.

Windmills and agricultural implements for Siam.—The Klong Rangsit rice district of Siam is at present a good market for windmills. The mills should be made of galvanized steel about 16 feet in diameter and suitable for furnishing power for irrigating purposes in dry weather and for husking and milling rice in wet weather and during the planting season. The dry season extends from November 1 to May 1, and during this season the soil is in such condition that agricultural implements can be used on the fields for plowing, harrowing, or even reaping.

ALLEGED DISCRIMINATION AGAINST AMERICAN TOOL STEEL.

Under date of June 5, 1903, United States Ambassador Meyer, of Rome, Italy, reports to the Department of State as follows:

"Raphael H. Wolff, esq., general agent of the Crucible Steel Company, of Pittsburg, called my attention to an alleged discrimination at the Italian custom-houses against importations of American tool-steel bars. These bars are sent to Italy with a slight coating of cheap varnish to prevent them from rusting on the sea voyage, and the Italian officials recently decided that this application of varnish was an advanced state of manufacture. The duty was therefore increased from 6 francs ($1.16) to more than 12 francs ($2.32) per 100 kilograms (220.46 pounds), while English and German bars, not so varnished, were admitted at the usual rates. I wrote to the Minister of Foreign Affairs on April 11 last concerning the alleged injustice. The minister, in his reply, is willing to consider the question as soon as another test case is presented."

Mr. Lewis Morris Iddings, United States chargé d'affaires, in reporting to the Department of State, under date of Rome, August 14, 1903, that the embassy had taken no further action than that taken by the ambassador, forwards the following statement of the case, prepared by the European agent of the Crucible Steel Company, of Pittsburg—J. C. Gutmann, esq.:

Mr. Gutmann to United States Ambassador Meyer.

Mr. Raphael H. Wolff, Hamburg, informed me of your answer of the 5th of June with regard to the way to choose in the divergence with the custom-house about tool steel. As all the particulars are in my hands, Mr. Wolff requests me to report to your excellency direct in the matter.

For the first I beg to inform you that the customs controversies were all regularly made on arrival of the goods. The first, in August of last year, for bright rolled steel, greased, was by the Collegio dei Periti decided to my disfavor, and the steel in question, which was of a common quality, had to pay 11 lire per 100 kilograms ($2.12 per 220.46 pounds)—*i. e.*, about one-third of its value. Another controversy which I made on the 30th of March last for another lot of steel varnished against rust is still pending, and I beg to inclose copy of my answer to the Collegio dei Periti.

Here I beg to draw your attention to the following facts:

Until about one year ago all the steel, whatever was its exterior, paid 6 lire per 100 kilograms ($1.16 per 220.46 pounds) duty, and I received hundreds of tons at this rate without there having ever been the least difficulty. Since that time, however, the custom-house officers seem to have been discovering reasons for putting steel in the highest possible class. In all cases the objections, it seems to me, are contrary to the sense of the customs tariff. The difference in the duty is so considerable that many kinds of steel—as, for instance, the above-mentioned rolled steel—are excluded from further importation into Italy. In the controversy of March 30 the duty the custom-house officers assessed is exactly two and one-half times as much as it ought to be—*i. e.*, 15 lire ($2.90) instead of 6 lire ($1.16).

An early settlement of the matter is the more desirable as a considerable quantity of American tool steel is lying in the port of Genoa awaiting decision in the important question.

I am, etc., J. C. GUTMANN.

GENOA, *July 9, 1903.*

Mr. Gutmann to the Italian customs experts.

I maintain that the preparation which is found on the surface of the steel bars is only an antirust preparation, which disappears upon contact with fire, and not a varnish in the sense of the definitions of the customs list; the point of view of which certainly is that varnish increases the value of merchandise.

This is steel for tools, is rolled, beaten, and polished in every way according to the kind of tool it is desired to make, and, consequently, the antirust does not increase the value at all.

IMPORTS INTO NATAL FROM THE UNITED STATES.

(From United States Consul-General Bigham, Cape Town, Cape Colony.)

I inclose a statement of imports from the United States into Natal during the year 1902, as reported by the collector of customs at the port of Durban, which is the only port of importance in Natal.

W. R. BIGHAM, *Consul-General.*

CAPE TOWN, CAPE COLONY, *August 26, 1903.*

Imports from the United States into Natal during the year 1902.

Article.	Value.	Article.	Value.
Agricultural implements	$138,393.53	Metals, etc.—Continued.	
Machinery:		Stoves	$79,990.00
Agricultural	17,319.87	Lamp ware	7,898.33
Electrical	119,268.18	Typewriters	18,745.76
Mining	48,168.62	Ironmongery	42,654.87
Printing	11,582.27	Apothecary ware	10,696.57
Other free	186,776.27	Medical preparations	46,129.55
Dutiable	14,779.03	Bicycles	26,181.77
Sewing machines	17,675.13	Brush ware	17,164.14
Engine packing	4,642.64	Furniture	74,535.31
Materials:		Candles	16,156.73
Telephone	111.93	Playing cards	13,791.66
Railway	116.80	Carts and carriages	112,708.14
Electrical fittings	47,273.18	Clocks and watches	49,487.44
Metals and manufactures of metals:		Confectionery	12,988.69
Fencing	119,584.50	Cotton manufactures:	
Nails	7,562.54	Plain	1,031.70
Rivets and bolts	8,964.09	Printed	22,006.31
Piping	6,740.10	Glassware	2,287.25
Steel bars	481.78	Glass bottles	1,275.02
Wire netting	4.87	Haberdashery	7,080.76
Hardware	166,750.62	Hats	8,603.97
Bedsteads	1,708.14	Musical instruments	9,402.08

Imports from the United States into Natal during the year 1902—Continued.

Article.	Value.
Leather and manufactures:	
Enameled, etc	$9,844.93
Manufactures	8,968.96
Boots and shoes	102,916.74
Saddlery	3,284.89
Unmanufactured	4,822.70
Oilman stores	42,139.02
Sheep dip	7,567.41
Stationery	2,467.31
Wooden ware	27,568.72
Food stuffs, fodder, and natural products:	
Bacon and hams	13,212.55
Margarin	5,299.62
Beans and pease	282.26
Maize	2,749.57
Oats	27,870.44
Wheat	5,411.55
Wheaten flour and meal	915,724.44
Beans	180.06
Beans and pease, crushed	1,036.56
Crushed maize	53.53
Maizena	13,222.28
Rye	715.37
Crushed oats	19.47
Eggs	277.39
Macaroni, sago, etc	11,246.48
Preserved fish	103,826.78
Fodder	7,460.34
Fruits—	
Dried	21,276.34
Preserved	53,833.22
Honey	622.91
Food stuffs, etc.—Continued.	
Hops	$3,737.47
Lard	80,793.63
Meats—	
Preserved	510,379.05
Salted	2,574.38
Condensed milk	65,795.08
Oatmeal	62,364.20
Oils:	
Paraffin	235,835.46
Other	107,481.52
Turpentine	22,011.18
Skins	7,557.67
Tobacco	211,814.41
Cigars	7,620.94
Cigarettes	15,212.68
Preserved vegetables	19,057.21
Wood:	
Unmanufactured	159,611.47
Planed and grooved	198,723.53
Houses and frames	147,464.68
Summary of imports.	
Food stuffs, fodder, timber, and other natural products	3,042,355.74
Machinery	605,154.14
Metals and manufactures of	451,085.62
Sundry manufactures	641,107.84
Goods imported in small quantities in all above classes	970,740.22
Total	5,710,443.56

Exports from Natal to the United States during the year 1902.

Agricultural implements	$19.47
Books	145.99
Curiosities	107.06
Ox and cow hides	9,246.35
Minor products	121.66
Total	9,640.53

EXPERTS AS AIDS TO EXPORTS.

(*From United States Deputy Consul-General Hanauer, Frankfort, Germany.*)

In former reports I have called attention to the action of the German Government in appointing experts in commerce and technics as attachés to important German consulates-general abroad for the purpose of aiding the home manufacturers and exporters in their efforts to gain foreign markets. I expressed the opinion that this was the best move in that direction undertaken by any government, for consuls are not generally fitted, by their training or selection, to do the work of commercial or technical experts. The last issue of the sheet published by the German Imperial Ministry of the Interior contains a notice of the appointment of Dr. K. T. Stöpel, hitherto secretary of the Chamber of Commerce at Halle, to the position of commercial attaché at the German consulate-general in Buenos Ayres. The official notice also makes known that Mr. Stöpel, before proceeding to his post, is desirous of having interviews with German manufacturers and merchants interested in trade with the Argentine Republic. For this purpose the new attaché is about to visit the principal manufacturing centers exporting goods to Argentina, and he invites those parties who are interested, but whom he can not personally meet, to communicate with him by letter and express their views and wishes to him.

This is proceeding in a businesslike way to help the economic interests of the country.

Germany is alive to the necessity of securing foreign trade. The late crisis proved this to the German people and the Government will continue to appoint more such experts to act as pathfinders and pioneers for her manufacturing and business interests.

SIMON W. HANAUER,
Deputy Consul-General.

FRANKFORT, GERMANY, *September 10, 1903.*

CUBAN FRUIT IN THE UNITED STATES.

(*Translated in the Bureau of Statistics from El Economista Mexicano of September 19, 1903.*)

Our trade in fruits with the United States may one day attain proportions much greater than those of to-day. Cuba, favored by shortness of distance and exquisite quality of its products, occupies a favorite place among the countries exporting tropical fruits—an industry offering a new and endless source of riches. Not long ago the industrial situation in Jamaica was sufficiently critical to cause a fall in its sugar trade and in the banana trade. It owes its prosperity in great part to the encouragement of the trade in fruits, which constituted 50 per cent of its exports, sugar never going beyond 10 per cent.

Consumption of fruits has developed in such an extraordinary manner in the United States that during the fiscal year ended June 30, 1902, the value of fruit importations of the United States amounted to $21,500,000, while thirty years previous to that time importations amounted to $13,000,000. In 1870 only $7,000,000 were imported. The imports of bananas alone into the United States in 1902 amounted to $7,300,000, drawn from the following sources: British West Indies, $3,400,000; Costa Rica, $1,500,000; Honduras, $700,000; Colombia, $560,000; and only $530,000 from Cuba, against $1,500,000 in 1892. The value of the lemons, sweet and sour, imported into the United States from Italy amounts to more than $3,000,000. Of the oranges imported—$400,000 worth—the preference is given those from the British West Indies. Of cocoanuts the United States imported from the British West Indies, $325,000; Colombia, $483,000; Cuba, $175,000; total, $832,000.

With these figures before our eyes we can feel assured that the United States will consume our production of fruits in much larger quantities than we can supply them. And if Italy, from the other side of the ocean, can send to the United States more than $3,000,000 worth of lemons in a single year, Cuba, situated within three days of their leading ports, blessed with a climate and soil of an exceptional character for the cultivation of oranges, offers a wide field in which to obtain great results. If in the years 1892 and 1893 Cuba exported to the United States bananas to the value of $1,500,000, it will not be difficult to equal this amount again or even to surpass it. The British West Indies, which in the same period sent only $1,300,000 worth, sends to-day of the same fruit $3,000,000 worth.

ORANGE BOXES FOR PARAGUAY.

(*From United States Consul Ruffin, Asuncion, Paraguay.*)

I submit, for the information of the Department of Commerce and Labor, an account of the active interest that is being displayed by the orange growers of this country for the development of the orange business and the cultivation of the trees. I do not think that with the present system of exporting oranges they will ever be able to send them to North American or European markets; still, there is an enormous exportation to the countries south of Paraguay.

With a view to changing the methods of exportation, a number of the growers have spoken to me of the systems employed in the United States, especially in the State of California. They would be glad to obtain catalogues of orange-box manufacturers, with prices of boxes already made, but knocked down f. o. b. New York or, better still, f. o. b. Buenos Ayres. At the same time, they would be glad to get such information as these box manufacturers or such other parties engaged in the fruit-packing business could give them that would assist in improving this branch of trade in Paraguay. I believe that if the boxes, which necessarily have to be of very light wood, could be obtained at a reasonable price large quantities would be purchased. Although there exists in this country a great amount of timber, it is principally hard wood.

In addition to the boxes, they would be glad to get some catalogues and information on classifiers, or machines for separating the oranges preparatory to boxing.

The Paraguayan orange is one of the best on the market in Buenos Ayres and Montevideo, particularly those which are grown in the higher portions of the country, called the cordilleras, famous for their superior quality, sweetness, and flavor.

The system of exporting oranges now is very crude and contributes more to the destruction of the fruit than to its preservation.

They are hauled for miles in carts, in which they are loaded in heaps, to the point of embarkation on the river. There they are piled up on the steamboats, whither they are carried in baskets on the heads of women.

In spite of this crude way of exportation, there is a very large business done annually. If the improved boxing and packing methods of the United States could be adopted here, as I believe it will be, the trade would advance, whereas now thousands of oranges rot on the ground.

In this country the oranges seem to have no pest enemies except the locusts, which visit Paraguay about every seven to ten years, so I am informed.

Parties interested in this matter will kindly send to this consulate any information pertaining to the orange business.

JOHN N. RUFFIN, *Consul.*

ASUNCION, PARAGUAY, *August 1, 1903.*

PRODUCTION AND CONSUMPTION OF ORANGES AND LEMONS.

(From United States Consul Bartleman, Cadiz, Spain.)

I submit herewith some interesting statistics concerning the production and consumption of oranges and lemons, translated from a recent publication of the Ministry of Agriculture, Industry, and Commerce of Italy.

France.—The greater quantity of the oranges and lemons consumed in France are imported from Spain. Bordeaux imported during 1900 203,108 pounds from Italy, 161,770 pounds from Spain, and 11,000 pounds from Algeria. Lyons imported 176,000 pounds from Italy and 110,000 pounds from Spain. Marseilles imported 4,220,000 pounds from Algeria, 3,018,700 pounds from Spain, and 2,015,400 pounds from Italy. Paris, during the first three months of 1901, imported from Spain 36,494,900 pounds, from Algeria 3,392,600 pounds, and from Italy 2,731,400 pounds.

Germany.—Germany imports more and more each year, Hamburg being the center of distribution not only for the Empire but for Denmark, Sweden, Norway, and Russia. From July 1, 1900, to June 30, 1901, Hamburg imported 800,000 boxes from Italy, 280,000 boxes from Spain, and 5,000 boxes from Syria. (The Spanish boxes contain twice as many oranges and lemons as the Italian and Syrian.) In 1900 Berlin received 102,850 pounds from Italy and 34,207 pounds from Spain. The principal towns in Germany, where there is great demand for this fruit, are Cologne, Dresden, Frankfort, Kiel, Leipzig, Mannheim, Stettin, Munich, Nuremberg, and Stuttgart, which in 1900 imported 25,715 tons from Italy and 8,552 tons from Spain.

Great Britain.—The greater part of the oranges consumed in England come from Spain and the lemons from Italy. Cardiff receives about 50,000 boxes of oranges and 8,000 boxes of lemons from different countries and double the quantity could be consumed. Glasgow receives about 245,000 boxes of oranges from Spain, 26,000 boxes from Italy, 12,000 boxes from Palestine, 2,000 boxes from California, and 1,000 boxes from Jamaica and Florida; in addition to which it receives some 50,000 boxes of lemons from Italy. Liverpool receives 866,910 boxes of oranges from Spain and 26,422 boxes from Italy, as well as about 285,000 boxes of lemons from Italy. London received during the first six months of 1900 (place of origin not stated) 1,448,050 boxes of oranges and for a like period in 1901 1,415,277 boxes of oranges and 239,103 boxes of lemons.

Greece.—Greece exported in 1898 oranges and lemons to the value of $44,901; in 1899, to the value of $68,647.60.

Roumania.—Roumania receives large quantities of oranges and lemons, the normal imports amounting annually to about 5,600 tons, mainly from Turkey and Italy.

Russia.—The principal supply of Russia comes from Italy, lemons ranking first. The same holds good for Finland, which in 1900 imported oranges to the value of only $7,057, but imported lemons to the value of $67,955. At Batum there arrived from Sicily during the year 1901, 18,627 boxes, of which lemons constituted 60 per cent. Helsingförs received, in transit for Germany, during the same year 158.4 tons of oranges and 29.7 tons of lemons. Moscow receives nearly all its fruit from Italy. Odessa receives annually 385 tons from Italy, 220 tons from Turkey, and 5.5 tons from Greece. Revel, Riga, Libau, and St. Petersburg also receive large quantities by sea, or in transit, via Odessa, Taganrog, Trieste, Hamburg, etc. The imports of oranges into all Russia in 1901 amounted to 26,841 tons and the imports of lemons to 25,580 tons.

Servia.—Servia receives its fruit almost wholly from Italy. Of a total import of 179 tons, however, only 18.6 tons are consumed in the country, the rest being reexported.

Sweden and Norway.—In 1899 Christiania received 3,858 tons of oranges and lemons, one-third of which came from Italy. During the same year Stockholm received 3,082 tons of oranges, valued at $262,804, of which 890 tons, valued at $75,890, came direct from Italy, and lemons, valued at $4,277, also from Italy.

Switzerland.—Switzerland imports oranges and lemons annually to the amount of 2,678 tons, chiefly from Italy and Spain.

Turkey.—Turkey produces a great quantity of oranges and mandarines; nevertheless it imports lemons from Italy, Syria, and Tripoli. The same may be said of Smyrna, Trebizond, Saloniki, Monastir, etc.

South Africa.—Cape Colony imports these fruits from the Canary Islands, Madeira, and Natal, and some from Italy.

Egypt.—Egypt imports chiefly from Turkey and Italy in great quantities.

Argentine Republic.—The Argentine Republic is reducing its importations, owing to the increase of the home production and that of Paraguay. In 1898 Italy sent thereto 113,000 boxes of oranges and 26,863 boxes of lemons; in 1899, 433,000 boxes of oranges and 19,876 boxes of lemons; in 1900, 1,038,000 boxes of oranges and 13,484 boxes of lemons. Spain and Brazil sent small quantities. Other South American republics do not import this fruit, while some export in small lots.

Canada.—Canada receives its oranges and lemons from Jamaica, California, Florida, and Italy.

Australia.—Australia receives about 12,000 boxes of oranges and 28,000 boxes of lemons. All come from Italy.

United States.—In 1900 Chicago received from Italy 45,900 boxes of oranges and 2,150,000 boxes of lemons; from California, 8,000,000 boxes of oranges and 800,000 boxes of lemons; from Jamaica, 800,000 boxes of oranges; and from Florida, 1,000,000 boxes of oranges. The receipt of oranges at New York in 1901 was as follows: From Italy, 2,934 tons, valued at $113,915; from Mexico, 3,900 tons, valued at $136,926; from the British West Indies, 16,925 tons, valued at $444,044; from Japan, 186 tons, valued at $7,751; and lemons from Italy, 72,335 tons, valued at $3,412,308; lemons from Canada, in transit, 1,101 tons, valued at $98,030.

As the production in the United States (California and Florida) increases each year, in a very short time the United States will have to look for a foreign market for its enormous production.*

R. M. Bartleman, *Consul.*

Cadiz, Spain, *July 22, 1903.*

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* The production of oranges in the United States amounts to 12,000,000 boxes per annum, of which 10,000,000 boxes are produced in California and 2,000,000 boxes in Florida. The consumption of lemons in the United States amounts to 3,000,000 cases per annum, of which 1,000,000 cases are produced in California, the remainder being imported.

BANANA INDUSTRY OF GUATEMALA.

(*From United States Consul-General Winslow, Guatemala City, Guatemala.*)

The production of bananas in Guatemala is a very profitable industry when carried on systematically and in an up-to-date manner. The best soil for banana culture is in the eastern part of the Republic, in the Provinces of Izabal and Zacapa, where about 75 per cent of the soil is well adapted to the cultivation of bananas. This section of the country is in close connection with the United States via the United Fruit Company's Steamship Line, which makes regular weekly trips.

The soil is very productive and easily cultivated after being cleared and subdued. The average price received is 20 cents United States gold per bunch of five hands or more. What is known as a hand is the cluster of eight or ten bananas found attached to the stem close together. The more hands on a stem the higher the price, and bunches of less than five hands are not shipped. The clearing, planting, and cultivating of a banana plantation the first year costs, on an average, about $20 per acre, but thereafter the cost is very light. After the sixth year the quality of the crop deteriorates, for the number of the small bananas increases. The crop is quite sure, and is only affected materially by the rains.

At present there is a large opening in this field, with very good shipping facilities to the port by the Guatemalan Northern Railway. The capital required is not very great and can be gotten out of the first two crops, with a good profit besides.

The principal drawback to this industry for a foreigner is the unhealthy climate. The banana country is low and hot. However, native help is cheap, costing from 5 to 7 cents gold per day, and usually plenty of it can be had.

This same soil readily produces rice, rubber, cocoa, oranges, and lemons, but the banana crop gives quicker returns than any of the others.

Bananas are often grown in connection with the growing of a rubber plantation, being planted between the small rubber trees, and five or six good crops can be harvested before the rubber plants get in the way.

ALFRED A. WINSLOW,
Consul-General

GUATEMALA CITY, GUATEMALA, *August 31, 1903.*

COAL IMPORTS AT TAMPICO, MEXICO.

(*From United States Consul Magill, Tampico Mexico.*)

The coal and coke imported into Tampico during the fiscal year ended June 30, 1903, was as follows:

	Tons.
Coal:	
American	280,906
English	31,620
Total	312,526
Coke:	
German	142,494
American	29,860
English	5,216
Total	177,570
Total coal and coke	490,096

The importation of German coke and English coke and coal will not last; purchases in those markets by local buyers was made necessary by the very unsettled condition of American coal-mining interests during the past year.

The greater part of the American coal came from Pensacola, Fla., under contract for the Mexican Central Railway, and was furnished by the Louisville and Nashville Railroad, which has excellent facilities for loading coal into vessels in Pensacola.

The German coke above listed came from Westphalia, Germany, and was shipped from the ports of Amsterdam, Rotterdam, and Antwerp. I have been informed that in the smelters the results from German coke are not as satisfactory as from the American.

A new dock for the discharge of coal and coke is under construction at this port by the Mexican Central Railway. It is to be provided with modern machinery for quick discharge of coal cargoes. This improvement has been made necessary by the increase of the coal trade at this port, and it is rumored that still another coal-unloading dock will be constructed by private parties who are local representatives of the smelters.

SAML. E. MAGILL, *Consul*

TAMPICO, MEXICO, *August 17, 1903.*

SILK INDUSTRY OF THE UNITED STATES.

(*From United States Consul Covert, Lyons, France.*)

The French sales of silks to the United States remain at about the same average from year to year, notwithstanding the continuous increase in our domestic production. The figures of our progress in this industry, as given by a Frenchman writing from New York, are: In 1870 there were 86 silk mills in the United States, representing an investment of $6,285,000. In 1900 the number of mills had increased to 483 and the capital invested was $81,000,000. In 1902 there were 500 mills, with $100,000,000 capital, and at the end of this year it is estimated that 45,000 steam looms will be in operation in the United States. The value of the products for the three dates here mentioned were: In 1870, $14,000,000; in 1900, $107,000,000; and in 1902, $125,000,000. A Paris writer, in commenting on what he calls these phenomenal figures, declares that while this immense increase in production was going on in the United States the importations of silk augmented from $24,000,000 in 1870 to $26,100,000 in 1900 and $30,000,000 in 1902.

In 1860 we manufactured but 6 per cent of the silk worn by our people. In 1880 we produced 38 per cent; in 1890, 55 per cent; and in 1902, 85 per cent.

In commenting hereon the Paris writer says that of manufactured silk we consume about $2 per year per capita of our population, because, he adds, "The Americans earn more money and spend more money than any other people in the world."

The immense domestic production of our country is not the work entirely of Americans. Swiss and Germans who are in the business in their own countries have built and are conducting silk factories in the United States. When a high tariff was imposed upon silk goods the European manufacturers, who thought they saw their best market slipping away from them, at once erected silk mills in the United States, thus making that country an outlet for their surplus capital and enterprise. Whatever may be done in the business in the United States, France is likely to possess the monopoly of certain grades of goods indefinitely—for instance, the mousselines, into the production of which enters a great deal of cheap labor, and the fine fancy silks, the new designs for which depend entirely upon the number and ability of the artists ready to engage in such occupation. Art is everywhere studied in France, and if a child shows an artistic talent a way is generally found to develop it in Paris and finally in

Rome. While waiting for a market for his brush he is always sure to be well paid for a fine design for silk goods, and the fruits of his artistic study often make or unmake the fashion.

JOHN C. COVERT, *Consul.*

LYONS, FRANCE, *August 31, 1903.*

SILK INDUSTRY OF FRANCE.

(*From United States Consul Covert, Lyons, France.*)

According to a voluminous report just issued by the Chamber of Commerce of Lyons, this city still continues to hold its place at the head of the silk industry of the world. It records a slight advance every year, notwithstanding the rapid progress being made by other cities. In 1902 the condition house in Lyons conditioned 110,560 bales of raw silk, weighing 15,763,033 pounds, against 106,762 bales, weighing 15,124,228 pounds, in 1901. Compared to the decennial period 1892 to 1901 the figures for 1902 show an increase of 1,564,739 pounds over the average for that period, while the business of the year 1901 was an increase over that of the previous year. It is stated that this increase is due to the use of power in weaving goods dyed in the piece.

Notwithstanding the increase in the business of the Lyons condition house, it is second to that of Milan. It must be remembered, however, that considerable of the business of the latter city is in the hands of Lyonnese merchants, but not enough to account for the great difference between the two cities that is shown in the following table:

City.	1900.	1901.	1902.
	Pounds.	*Pounds.*	*Pounds.*
Lyons	13,291,878.6	15,124,227.8	15,763,253
Milan	15,891,755	19,134,478	21,668,570

The progress of Milan in this business is largely due to the production of raw silk in Italy; also to the establishment of a German steamship company which connects Genoa with the ports of the extreme Orient.

The report of the chamber of commerce states that important transactions carried on at Milan should be credited to Lyons, as they belong to branch houses established by this city. It is set forth in the report that not less than 6,600,000 pounds of raw silk are exported from Lyons yearly to foreign countries and that 9,240,000 pounds of raw silk are worked up in looms which belong to Lyons, though many of them are outside of the city.

A number of condition houses exist in Europe, but of the 53,400,600 pounds conditioned in them over 37,400,000 pounds are credited to Lyons and Milan. The most important of the other conditioning houses are: Zurich, which in 1902 conditioned 3,148,160 pounds; St. Etienne, 2,772,532 pounds; Turin, 1,419,939 pounds; Crefeld, 1,371,706.6 pounds; Basel, 1,294,895 pounds; and Elberfeld, 1,182,592 pounds.

The production of finished silks in Lyons amounted to $88,940,000 in 1902, showing an increase of $1,070,000 over 1901. The increase is due to a single line of goods; light tissues, crepes, and, above all, silk muslins furnished the greatest amount of work for its looms during the year.

The increase in their production was 93.5 per cent. Silk is constantly losing its preeminence and is being used now only as an accessory to the feminine toilet, as waists, linings, and petticoats, while silk dresses of fine quality are becoming more and more rare. Manufacturers are compelled to follow the taste of their customers and to produce several qualities of goods in order to suit the trade. These facts are noticeable in all the silk manufactories of Europe.

The exportations of silks from France have been well maintained during the last ten years. With the exception of a slight decline in value in 1894, 1896, 1899, and 1900, the volume of exportations has increased from 7,792,400 pounds in 1893 to 10,927,400 pounds in 1902; in value, from $44,884,400 in 1893 to $61,714,900 in 1902. This does not give a complete statement of the business, as it does not include the amount sold in postal parcels. According to an investigation made at one railroad station in France, 6,841 parcels, weighing 40,416 pounds, of silk at a declared value of $179,583 were sent abroad in one month. Multiplying this by 12, it would show a total of $2,155,000 for one railroad depot. The report expresses the opinion that if all the silk that is sent by mail were included the total exportations would not fall short of $72,000,000.

Of the countries to which these silks are exported England leads. The exports thereto in 1902 amounted to $29,395,800, against $22,967,000 in 1901. The report states that considerable of this merchandise credited to Great Britain was really sent in English ships to the United States. The French customs authorities place at $11,640,000 the silks sent to the United States in 1902, against $13,031,200 in 1901. For the two countries, England and the United States, the exportations increased from $35,998,200 in 1901 to $41,034,600 in 1902.

If we group in the same manner Belgium, Switzerland, Austria, and Italy, we find that France exported to those countries in 1902 $9,589,200 worth of silks, against $9,940,800 in 1901. The business by postal parcels was necessarily greater with those countries than with the United States or Great Britain. Spain and Turkey bought of France in 1902 $1,100,000 and $1,200,000 of silk, respectively, which are about the figures of several previous years. On the other hand, a number of small countries whose total purchases aggregated but $4,600,000 in 1901 increased to $8,600,000 in 1902.

While France exported more silks than any other nation, her imports aggregated $14,324,200 in 1902, against $14,321,600 in 1901 and $12,420,000 in 1900.

Asiatic silk tissues, which constitute the raw material, are represented by 1,156,100 pounds, valued at $5,990,800, in 1902, against 1,216,820 pounds, valued at $6,305,800, in 1901.

The European countries which furnish France with silk tissues, passementeries, and ribbons are Switzerland and Germany. In 1902 the first of these countries exported to France $3,901,600 of this merchandise and the second $2,242,400. England was third in rank, with $1,707,000. Italy and Austria-Hungary are estimated to have sent about $178,600 and $40,800, respectively. Other countries are put down in block for $6,271,800, the total of foreign importations being $14,324,200.

Ten years ago the importations of manufactured silk into France hardly reached $10,200. The purchases from abroad and the sales abroad have progressed in parallel lines. The minimum rate of exportations at present is placed at $61,714,800. Ten years ago the average was $44,884,200.

Switzerland, the principal exporter of silks and ribbons, last year sent to France 6,404,200 pounds, valued at $28,763,000, the highest amount recorded at the customs offices of importations from that country. In 1885 the silk importations from Switzerland were $19,831,400 and in 1901 they had jumped to $27,504,000. Most of this came from Zurich; the ribbons came from Basel.

JOHN C. COVERT, *Consul.*

LYONS, FRANCE, *August 31, 1903.*

RUBBER FORESTS OF BRAZIL.

(*From United States Consul Kenneday, Para, Brazil.*)

The month of August, 1903, shows nearly the lowest export of rubber for any August during the past seven years, the same period in 1897 being the only one which falls below the figures for last month. Buyers and exporters here are not, however, allowing themselves to become discouraged over the bad showing of August, though they admit their disappointment. They point out that in nearly all previous years the deficit in August exports has been more than made up by the large gains in later months, and a steady annual increase has always been shown.

The one feature of the situation which is really worrying the rubber men is the rapid destruction of the rubber forests in the very region where the best rubber is found. The number of men who have gone into the rubber belts this year passes all records and all expectations, and they are still going in great numbers. These men have heard of the high prices rubber is now commanding. They are eager for gain, and many of them, as well as the owners of estates, are anxious to retrieve the losses of last season. It is therefore to be expected that the destruction of the rubber forests this year will be beyond all precedent—enormous and irreparable.

Advices from an exploring expedition headed by Mr. William Gerdeau confirm the reports of the destruction of rubber forests here during the past year. Captain Gerdeau, who is an expert of fourteen years' practical experience, has been exploring, investigating, and canvassing the territory of the upper Amazon and its tributaries in the richest rubber belt in South America for more than a year, advises me that the rubber gatherers are cutting down the forests with amazing rapidity and improvidence, far beyond what his previous information had led him to expect. He expresses grave doubts if the supply can be kept up unless stringent measures to protect the rubber forests be immediately taken.

In this connection I herewith transmit a report just handed to me by Mr. Robert B. Ewart, recently arrived from Lima, Peru, which completely confirms Captain Gerdeau's report as to the destruction of the rubber forests.

Both Captain Gerdeau and Mr. Ewart report that in the regions they have visited there are really inexhaustible supplies of hard woods and dyewoods of the most valuable varieties—rosewood, mahogany, lignum-vitæ, walnut, cedar, and many others being common and exceedingly abundant throughout all this region and only awaiting the hand of the pioneer and the enterprise of the trader to be turned into gold.

K. K. KENNEDAY, *Consul.*

PARA, BRAZIL, *September 9, 1903.*

A TRIP ACROSS SOUTH AMERICA.

Mr. Robert Blair Ewart to Consul Kenneday.

In response to your request I take pleasure in giving you the following brief memorandum of my trip across South America:

I am a volunteer member of the Field and Stream Syndicate Expedition, of which Mr. Alvah D. James is the leader and Mr. Gustav Henschen is my associate member. We sailed from New York for Callao, via Colon, on April 27, 1903, and arrived in Para August 31, thus making a record trip despite the hardships and misfortunes we encountered.

The itinerary of our trip was as follows: Callao to Lima; thence by way of the wonderful Royal Railway to Aroya, 137 miles; from Aroya by mule trail and pack train to Puerto Jupusu, on the Rio Supusu; at the latter place we took canoes to Puerto Bermudas, whence we traveled to Port Victoria. Our entire journey, I might add, from Puerto Jupusu to Para was made by water down the Amazon Valley.

Port Victoria is situated at the junction of the Rio Pichi and Rio Palcazar, these two rivers thus forming the Rio Pachitea. It is along this river that the terrible Cashaibas Indians live. Down the Pachitea to the Ucayali, and by this stream to Iquitos, we made our way, meeting with many mishaps, as these rivers are obstructed by falls, rapids, sand bars, snags, etc., rendering travel all but impossible. Traveling by land in these regions is out of the question, even to the Indians themselves.

The Ucayali is a magnificent stream, as large as the Mississippi, and traverses one of the finest rubber districts in South America. But through all this region the country, from a distance of 2 miles inland from the various streams, is wholly unexplored and completely unknown, even to the natives themselves.

In all this great territory there is but one man who is producing "borracha," or fine rubber. All the rest are "caucho hunters." These latter are the bane of the country, and have done incalculable damage in the past few years. They do not bleed the trees in the regular way, but cut them down and extract the gum by the wholesale. Thus every year enormous forests of rubber are destroyed, and each year the supply grows less and less and the rubber gatherers are compelled to go farther back from the rivers. This makes the production of rubber more difficult, dangerous, and expensive each year, and it is only a question of time when this immense and most important rubber-producing territory will be entirely stripped of its rubber forests. I found that caucho is selling on these far upper rivers for 20 to 22 soles ($10 to $11) per arroba of 32 pounds.

All this region of the upper Amazon and its tributaries offers magnificent facilities for cattle ranching. When the higher lands are reached there are vast stretches of prairies, or "savannas," as they are called, with a climate like spring all the year, where cattle enough to supply a continent can be raised, practically without expense.

Throughout all the thousands of miles of territory I traversed, from the Pacific to the Atlantic, I found, on both sides of the Andes and all along the route, that nothing but Collins (American) knives or machetes were used by the people. They will not have anything else, and the sale of them, like their use, is beyond computation. I also learn that all the great enterprises in Peru are managed by Americans.

ROBERT BLAIR EWART.

PARA, BRAZIL, *September 7, 1903.*

RUBBER IN THE FRENCH COLONIES.

(*Translated in the Bureau of Statistics from La Quinzaine of September 10, 1903.*)

An industrial school for the exploitation of caoutchouc was established in the Sudan in 1902. The funds necessary for its operation were supplied by the colony in order to teach natives the best methods of culture, how to increase and preserve the trees, and at the same time teach them the best methods of proceeding with the gathering and coagulation of the juice. The school has been attended since the beginning by more than 150 pupils. These students, arranged into groups, have gone into the various parts of the rubber districts, particularly where the trees yield an abundance of juice. The system of education is practical in the extreme and is within the grasp of the most primitive intelligence. It gives a simple, scientific knowledge of the rubber plant, the best means to secure its preservation, explanations of the best methods of making incisions in the bark, instructions about the coagulation of the juice, and the making of it into balls of rubber.

In a report of June 28, 1903, the permanent governmental delegate in the colony confirms the good results obtained by the school. The merchants find useful auxiliaries among the natives, who have become very apt in the exploitation of the plants and in the avoidance of their destruction. While this school has spread its practical and useful knowledge, instructions were also given to the different overseers of the district with a view of impressing upon the people the fact that the exploitation of the caoutchouc is a source of very considerable revenue. The attention of the Government was not limited to these initiatory methods of exploitation, but has been attracted to the abuses which have grown up in the rubber trade; notably to the dishonest practice of certain natives in augmenting the weight of their collections of crude rubber by the introduction of foreign materials. This, if not prevented, could easily injure the future of the rubber trade in the markets of Europe. Restrictive measures have been imposed. As early as February, 1902, the lieutenant-governor of Guinea published a decree forbidding the exportation of adulterated rubber. This measure of watchfulness, at the very source of the colonial trade, has had the good result of securing for Guinea an export product of good quality, and one feels assured that the rubber now received from French West Africa, particularly those of Conakry, are of good quality, and above all homogeneous, an attribute that adds much to their essential value. For the purpose of realizing for all of the French African colonies the uniform regulation desired, a decree has been formulated which it is thought will inspire the same feeling in the colonies as that inspired in France for the elimination of the adulteration of rubber. This decree forbids the sale of balls of adulterated rubber.

RUBBER-TREE PLANTING IN THE EAST.

(*From United States Consul-General Hughes, Coburg, Germany.*)

The recent report of Mr. Stanley Arden, of Selangor, is of real value on account of the information it contains about rubber cultivation in the Far East. It records the assured success of the Para-rubber tree in the Malay Peninsula, thus extending the field available for the production of the world's best grade of rubber.

While the initial planting of *Hevea* in India proved a complete failure, better results were obtained from the beginnings made in Ceylon and the Malay States, where the seedlings rapidly developed into vigorous trees. But, as Mr. Arden says, very little interest was taken in rubber by planters, presumably on account of the high prices then ruling for coffee, which afforded an earlier return than was possible in the case of rubber. With a decline in the price of coffee, planters began to look for other sources of profit. During the season 1896–97 the planting of rubber was taken up seriously. Since then its cultivation has received great attention, and there are at the present time, in the Malay Peninsula alone, at least 12,000 acres planted with *Hevea*, representing about 1,500,000 trees, presumably the whole being the progeny of the trees originally introduced by the government of India in 1876.

The opinion has prevailed, and quite naturally, that any rubber species would require, for its successful cultivation, the conditions of soil, climate, etc., peculiar to its native habitat. The conditions found on the margins of the Brazilian water ways clearly do not exist in the Malay States, but this fact has not interfered with the satisfactory growth there of *Hevea*.

OLIVER J. D. HUGHES,
COBURG, GERMANY, *September 9, 1903.* *Consul-General.*

EDUCATION AND THE ELIMINATION OF CRIME.

The following is a résumé of an article (translated in the Bureau of Statistics) in Die Woche (The Week), a German magazine, of August 22, 1903:

> Since the Prussian schoolmaster is said to have won Sadowa, education in Europe has been taken as the measure of culture. Knowledge of the elementary parts of the sciences is now regarded as essential to progress. Everywhere in the Western World the school doors are being flung wide open, particularly for the people who have to labor. Taking the year 1840, the year in which the modern movements may be said to have got fully under way, and compare it with the year

1896, the year for which one can find statistics for most European states, we find that the percentage of those who could write in those years was as follows:

Country.	1840.	1896.	Country.	1840.	1896.
	Per ct.	*Per ct.*		*Per ct.*	*Per ct.*
Great Britain	59	94	Spain	14	42
France	47	95	Holland	70	90
Germany	82	99	Belgium	45	83
Russia	2	22	Scandinavia	80	99
Austria	21	69	Switzerland	80	99
Italy	16	56	United States	80	83

These figures furnish cause for rejoicing.

While the percentage of increase in the population between 1840 and 1888 was only 30 per cent, the educational increase was 145 per cent. The percentage in the United States is depressed by the hundreds of thousands of ignorant immigrants. As long as the tide of immigration took its supply from lands in which education was advanced and compulsory the United States stood farther up the list. In 1889 92 out of every 100 grown persons could read and write. Since that time the immigration from western Europe has fallen off and that of eastern Europe increased. Russia, Hungary, Austria, and the Danubian lands have been sending their children to the New World, and the percentage for the United States went down; this, too, notwithstanding the fact that the Commissioner of Immigration is supposed to keep out all those who can not write their own names. Some of the foregoing figures are based upon estimates, hence are to be carefully considered. Figures taken from the different recruiting offices are a better basis upon which to build. In these, Germany leads again, with only 1 in 1,000 unable to read and write:

Country.	Per 1,000.	Country.	Per 1,000.
Germany	1	Austria-Hungary	220
Sweden	1	Greece	300
Denmark	4	Italy	380
Switzerland	22	Russia	620
Holland	40	Servia	790
France	49	Roumania	890
Belgium	128		

The number of men in Great Britain who could sign the marriage register was 67 per cent in 1841 and 88 per cent in 1888; of the brides, 51 per cent could write in 1841 and 84 per cent in 1888. In France 55 per cent of the women and 71 per cent of the men could write in the marriage register in 1861 and 78 per cent of the women and 86 per cent of the men in 1883. In Italy the conditions, though bad, are encouraging. In 1871 only 23 per cent of the women were able to write in the marriage register; in 1883, 33 per cent. It all indicates the marvelous progress of modern times in the matter of education. France in particular is a shining example. She now leads, and Germany steps back from first place. The amounts paid by France for education increased more than fivefold from 1860 to 1892. Between 1880 and 1892 they more than doubled. In other words, they went from 28,000,000 marks ($6,664,000) in 1860 to 66,000,000 marks ($15,708,000) in 1880 and 148,000,000 marks ($35,224,000) in 1892, although the population was practically at a standstill. The schoolmaster of Sadowa and Sedan has taught France well. Mulhall was of the opinion that there was a direct connection between ignorance and crime. As proof of this, he furnished the following figures showing the illiteracy and crime in Great Britain:

Description.	1841-1850.	1851-1860.	1861-1870.	1871-1880.	1887.
Children at school to every 1,000 of population	11	26	47	82	125
Criminals to each 100,000 of population	122	96	68	50	38

The number of youthful criminals fell from 45.8 per 100,000 of population to 21.5, and this brilliant result was attributed by Mr. Mulhall directly to the improvement in education. Now, we are the last in the world to depreciate the value of education as an aid to good morals and civic virtue, but it seems to us to be going too far when we give the school all the credit for this great change for the better. For, alas! in other lands, equally well provided with schools and educational facilities, the number of youthful criminals is increasing. In Germany 741 per 100,000 of population in 1886 and 873 in 1895 were condemned for crimes; but the number of youthful criminals went up from 31,510 to 44,380, or from 89 per 1,000 to 98 per 1,000 of those sentenced. There was an increase in youthful crimes of 40 per cent, while the population increased but 10 per cent. This shows that the connection between crimes of young people and education is not so close as Mr. Mulhall would have had us believe.

The humane state will have to devote a large part of its work of crime prevention through educational agencies. In this regard, it is interesting to note that there is a close connection between prostitution, vagabondage—this fruitful mother of crime—and crime. Among the masses of women who sell themselves for the world's pleasure, the illiterate make up by far the largest part; on the other hand, the highly educated supply only a vanishing fraction. In Paris, out of 4,470 examined 2,392 could neither read nor write, 1,780 could barely read and write, and only 110 could do both well. In Manchester, not 1 per cent of those examined could read and write. Dr. Baer, the distinguished advocate of temperance, tells us that of Germany's criminals 14.4 per cent were analphabets—persons ignorant of the alphabet. In some penitentiaries east of the Elbe 54 per cent were illiterates. There is doubtless a connection between education and the decrease of crime, but one must not forget that the almost miraculous change in England is largely due to the wonderful advantages offered by the fairylike progress in material things through which England has passed during the last fifty years. While the prices of foods, clothing, and living generally has decreased, wages have gone steadily upward. Want and temptation vanished; hence crime, so long affected by the price of bread, decreased. The better education has only helped as one factor in progress.

One ought to add, by way of suggestion, at least, that the increase in crime on the Continent, particularly in Germany, may be due in a very large measure to the great change in the lives of the people. Since 1840 the German Empire has changed from a farming or agricultural state to an industrial or manufacturing one. In 1840 67 per cent of its people were on farms and 33 per cent in mills; to-day, 66 per cent are in the mills, shops, etc., and only 34 per cent on farms.

HONDURAS AT THE ST. LOUIS EXPOSITION.

(*From United States Consul Moe, Tegucigalpa, Honduras.*)

To stimulate the inhabitants of Honduras to participate in the Louisiana Purchase Exposition next year, the Government, through the office of Minister of Exploitation and Public Works, has issued an invitation to the people of this Republic to prepare individual exhibits of the various industries of their respective districts, and to apply to the governors of their several Departments for information and assistance in the matter of preparing and arranging their displays.

This consulate has already published, for the benefit of prospective exhibitors from this Republic, the rules and regulations governing the packing, shipment, and entry of articles destined for the exposition.

The invitation reads as follows:

INVITATION.

The Minister of Exploitation and Public Works invites the inhabitants of the Republic of Honduras to participate in the International Exposition of St. Louis which will take place in the year 1904.

Honduras can exhibit: Cabinet and dye woods, manufactured and leaf tobacco, hats (of rush), rubber, coffee, sugar, cacao; gold, silver, copper, lead, etc.; woven fabrics, hammocks, lassoes, ropes, mats of palm; works on literature and pedagogy; relics of the Copan ruins and other ancient monuments; and, in fine, all things that may demonstrate our advancement in the arts.

Apply to the respective governors.

ALFRED K. MOE, *Consul.*

TEGUCIGALPA, HONDURAS, *September 7, 1903.*

SOUTH AFRICAN INDUSTRIAL EXHIBITION.

(*From United States Consul-General Bigham, Cape Town, Cape Colony.*)

When the South Africa British and Colonial Exhibition, to be held in the Gardens, near Government House, Cape Town, in 1904 and 1905, was first planned it was decided to rule out all goods not manufactured in Great Britain or her colonies.

I inclose a copy of a letter received from the secretary, by which it will be seen that the promoters have changed their plan and have now opened this industrial exhibition to foreign exhibitors as well as to British and colonial exhibitors.

As there is such great inquiry from manufacturers in the United States for information in reference to trade in South Africa, if this change of plan were published it might be the cause of our manufacturers sending their goods here on exhibition to increase their trade. I receive several inquiries every week, the tone of which makes it evident that many people in the United States have a very vague idea of South Africa.

I will report later the exact date of opening, which will probably be in November, 1904, to continue until about May, 1905.

W. R. BIGHAM, *Consul-General.*

CAPE TOWN, CAPE COLONY, *August 22, 1903.*

[Inclosure.]

CAPE TOWN, *August 19, 1903.*

DEAR SIR: It will no doubt be of very great interest to yourself and your Government to know that it has been decided to open up the forthcoming Cape Town Industrial Exhibition to foreign exhibitors as well as to British and colonial exhibitors. Fresh plans and prospectuses are now being prepared, and as soon as they are ready I will send you a copy of same.

Yours, etc., A. B. P. BAKER, *Secretary.*

INTERNATIONAL INDUSTRIAL EXPOSITION AT VIENNA.

(*From United States Consul-General Rublee, Vienna, Austria.*)

An international exposition of industries connected with the utilization of alcohol and products of fermentation is to be held in Vienna, opening April 16, 1904, and closing May 31, 1904. The exposition is to give a comprehensive illustration (1) of the present condition of the alcohol industry, with particular reference to the use of alcohol for technical purposes, and (2) of other industries connected with products of fermentation, namely, (*a*) breweries, (*b*) distilleries, (*c*) malt houses, (*d*) starch works, (*e*) production of fermented vinegar.

The following groups of articles are to be made the special objects of the exposition:

1. Machines and apparatus for the cultivation and preservation of potatoes, barley, hops, and similar products of the soil that are used in industries connected with products of fermentation.

2. Machines and apparatus for malt houses, breweries, and distilleries, and also for the manufacture of yeast, starch, and vinegar.

3. The products of fermentation, such as beer, ardent sprits, nonalcoholic liquors, yeast, starch, fermented vinegar, etc.

4. Machines and apparatus for the utilization of alcohol for technical purposes: (*a*) Alcohol motors and locomobiles and agricultural and industrial machines that can be operated with alcohol;

(*b*) vehicles and automobiles of all sorts that use alcohol; (*c*) heating and cooking apparatus for alcohol; (*d*) apparatus for the production of light by means of alcohol; (*e*) alcohol apparatus for other technical purposes.

5. Utilization for military purposes of denaturalized alcohol.

6. Products of all kinds that are manufactured partly with alcohol, such as varnish, perfumery, drugs, transparent soaps, etc.

7. Laboratory and scientific apparatus for industries connected with products of fermentation; also apparatus for measuring and controlling.

8. Equipment of buildings and interiors for apparatus using alcohol to generate light and heat or to promote hygiene.

9. Industrial products used in the foregoing processes, such as cellar utensils; apparatus for drawing off beer or other liquor; casks, bottles, and other receptacles; lanterns and rubber tires for automobiles, as well as clothing and general outfits for automobilists; elevators, vehicles, etc.

The time for entering exhibits ends September 30, 1903, but it is probable that an extension will be granted on application. The address of the committee in charge of the exposition is Neiderösterreichischer Gewerbeverein I, Eschenbachgasse No. 11, Vienna, Austria.

W. A. RUBLEE, *Consul-General.*

VIENNA, AUSTRIA, *September 14, 1903.*

CANADIAN LAW RELATIVE TO IMPORTS OF NURSERY STOCK.

(From United States Commercial Agent Johnson, Stanbridge, Canada.)

For the information and guidance of our nurserymen, as well as exporters of nursery stock, I report the recent passage of laws by the Dominion Parliament prohibiting the importation into Canada of any trees, shrubs, plants, vines, grafts, cuttings, or buds, commonly called nursery stock, liable to infection by the San José scale, except at the customs ports of St. John, New Brunswick; St. John's, Quebec; Niagara Falls and Windsor, Ontario; Winnipeg, Manitoba; and Vancouver, British Columbia. Such importations are permitted at the above-named customs ports between March 15 and May 15 and between October 7 and December 7, except at Vancouver, British Columbia, where importations are permitted only during the winter months, from October 15 to March 15. Such shipments will be fumigated by a government official at the risk of the shippers or consignees. This restriction does not prohibit the importation of roses, greenhouse plants, or flowers which have been grown entirely under glass, but such shipments must be accompanied by a certificate stating that they were grown under glass, otherwise they will not be permitted to enter the Dominion of Canada.

The plants exempted are as follows: (*a*) Greenhouse plants, such as palms, ferns, orchids, cacti, chrysanthemums, azaleas, begonias, and carnations; (*b*) herbaceous perennials the tops of which die down in winter, such as perennial phlox, dielytra, peonies, perennial sunflowers, etc.; (*c*) herbaceous bedding plants, such as geraniums, coleuses, verbenas, pansies, etc.; (*d*) all conifers; (*e*) bulbs and tubers, such as lilies, hyacinths, narcissi, and all other true bulbs, gladioli, caladium, irises, cannas, dahlias, etc.; (*f*) roses in leaf and in a growing condition, which have been propagated under glass.

FELIX S. S. JOHNSON,
STANBRIDGE, CANADA, *September 11, 1903.* *Commercial Agent.*

CANADIAN TARIFF CHANGES.

(*From United States Commercial Agent Shotts, Sault Ste. Marie, Canada.*)

The Dominion of Canada has recently passed a new customs act, the principal effect of which is shown in the inclosed report taken from the Canadian Manufacturer and Industrial World of August 21, 1903.

GEO. W. SHOTTS,
Commercial Agent.

SAULT STE. MARIE, CANADA, *August 29, 1903.*

CANADIAN TARIFF CHANGES.

Recognizing the significance of this act, we here give its salient features, in a synopsis, which business men will understand:

Section 3.—This section changes the constitution of the board of customs, which formerly consisted of the commissioner of customs, Dominion appraisers, and assistant Dominion appraisers, giving 14 or 15 members, who were located at various points in the Dominion, from the Atlantic to the Pacific, and a full meeting of the board could rarely be had. Under the new act the board of customs is to consist of the commissioner of customs and such duly qualified officers of customs as the governor-in-council from time to time appoints. It is probable that the number of members of the board will be reduced, and that they will be selected in such a way that a full meeting of the board can be held when required.

Section 4.—Under this section the minister of customs is given power to authorize the employment of temporary or acting officers of customs in the outside divisions of the service—that is, at ports and outports—as may be necessary to carry on the work during the busy seasons. Such extra employees will not necessarily become permanent members of the staff. No such officer shall receive a higher salary than he would be allowed if appointed permanently to the same rank or class to which he is temporarily employed, nor shall his salary be paid until voted by Parliament.

Section 5.—By this section the board of customs may declare the rate of duty payable on any class of goods, or that such goods are exempt from duty, subject to an appeal to the governor-in-council, and in case of such appeal any order-in-council, made upon appeal, shall have the same force and effect as if the rate of duty had been sanctioned by statute.

Section 6.—Section 10 of the old act read: "All invoices of goods shall be made out in the currency of the country whence the goods are imported." The new act adds after the word imported: "Or in the currency in which the goods are actually purchased." This will simplify matters very much for importers who frequently purchase goods in one country in the currency of another. For instance, it is a common practice to purchase goods in France and other continental countries in sterling currency, and it has latterly become a practice to purchase goods in these countries in dollars and cents. The following subsection is new and will be interesting to the importing public:

"All invoices shall faithfully exhibit the transaction between the exporter and the importer, and contain a true and full statement of the actual price payable for the goods, including cartons, cases, and coverings of all kinds, and all expenses incident to placing the goods in condition, packed ready for shipment to Canada, and no such invoice shall state any discount other than such as has been actually allowed to the importer."

Section 7.—This section repeals section 15 of the customs act of 1898, which reads as follows:

"On all articles manufactured from two or more materials the duty shall be that charged on the article, if there is a difference of duty, which is charged with the highest duty."

The new section reads as follows:

"On any article not enumerated, manufactured of two or more materials, the duty shall be assessed at the highest rate at which it would be chargeable, if the article was composed wholly of the component material thereof of chief value, having regard to the condition of the component materials as found in the article."

Sections 8 and 9.—These sections extend the time for making claim in respect of damaged goods from ten days from the date of landing to fourteen days of the date of entry, or of such landing. This extension of time, which will give the importer two weeks after the passing of his entry within which to prepare his claim for damage, will probably be much appreciated by business men.

Section 10.—Section 51 of the customs act of 1898 provides for the assessment of the amount of damage to goods sustained in course of importation. Under the new act the following provision is made for the advantage of importers:

"Provided that the collector may permit an importer, within fourteen days after entry or landing, to abandon to the Crown any whole package or packages of damaged goods and be relieved of the payment of the duties on the portion so abandoned; and the goods so abandoned shall be destroyed if, in the opinion of the collector, they can not be sold for a sum sufficient to pay duties and charges."

Section 12,—This new section makes provision for dealing with cases of injury or destruction in whole or in part of goods by fire or other casualty while in the custody of the customs, as follows:

"Upon production of satisfactory proof to the minister of customs of the actual injury or destruction, in whole or in part, of any goods by accidental fire, or other casualty, while they remain in the custody of the officers of the customs in any customs warehouse, or while in transportation in bond from one port of entry to another port of entry in Canada, or while within the limits of any port of entry, and before they were landed, under the supervision of the officers of the customs, the duties on the whole or part thereof so proved to be injured or destroyed may be abated or refunded; provided that the claim is made within fourteen days after the date of the casualty, and that due appraisement is made of the goods so alleged to be injured as soon as they can be examined."

Section 13.—This section provides for extending the time from ten to fourteen days within which claim for refund may be made because of inferiority or deficiency in quantity of goods or because of the omission in the invoice of any trade discount or any matter or thing which might have the effect of reducing such values for duty. This extension of time will be of great value to importers in many cases.

Section 16.—This section enacts that the collector shall require that the true invoice from the exporter to the owner of the goods be delivered for duty purposes with the bill of entry at the custom-house when such goods have been sold by the exporter thereof prior to their arrival in Canada, although the goods arrive in Canada consigned to a person other than their owner.

Section 17.—This section provides that every officer of customs and every person acting as such officer under the directions of the minister of customs may administer any oath prescribed to be taken in respect of any entry within the scope of the official duties assigned to such officer.

Section 18.—This section gives to the governor-in-council power for reducing the duty of all articles, whether natural products or products of manufactures, used as materials in Canadian manufactures; and any such materials specified in such order-in-council shall be subject to such reduced duty of customs, and no other, for the time and under the conditions therein provided.

The governor-in-council previously had power under subsection 1 of section 245 of the customs act for transferring to the list of goods which may be imported into Canada free of duty any or all articles (whether natural products or products of manufactures) used as materials in Canadian manufactures. In future the governor-in-council may either abolish the duty or reduce it, as may be advisable in the interests of Canadian manufacture.

PREPARATION OF PEAT FOR FUEL IN ONTARIO.

(*From United States Consul Burke, St. Thomas, Canada.*)

Through the publication of a note from this consulate in ADVANCE SHEETS No. 1603 (July 10, 1903), attention was directed to a bulletin issued by the bureau of mines of the Ontario government, at Toronto, on the preparation of peat for fuel and how to burn it, and as a result a large number of applications for copies of the bulletin have been received by me from the United States and have up to date been filled by Thomas W. Gibson, director of the bureau of mines, Toronto, upon my reference of the same to him. These communications still continuing to come to me, I have made inquiry of Mr. Gibson as to whether we might, through our CONSULAR REPORTS, direct others desiring copies to apply direct to him, and, if so, what the cost would be. In reply Mr. Gibson says:

> I find so great has been the demand for the bulletin that our stock is approaching exhaustion. It will give me pleasure to send copies of it without charge to applicants, whether from the United States or Canada, so long as there are any copies left; but I fear our supply would be insufficient to meet the demand were

you to insert the notice you speak of in the United States CONSULAR REPORTS. The bulletin is being republished in the Twelfth Report of the Bureau of Mines, now going through the press, and this will enable us to supply a considerable additional demand.

The twelfth report is now ready for distribution, and in view of the continued widespread interest in the peat question in the United States, if it will meet with the approbation of the Department, I would suggest that parties still desiring copies of the peat-fuel bulletin apply direct to Thomas W. Gibson, director of the bureau of mines, Toronto, Ontario.

M. J. BURKE, *Consul.*

ST. THOMAS, CANADA, *September 11, 1903.*

FINANCIAL AND COMMERCIAL CONDITIONS IN GUATEMALA.

(*From United States Consul-General Winslow, Guatemala City, Guatemala.*)

The business interests of the Republic of Guatemala are suffering much and the outlook is not very promising for the immediate future, although the conditions are somewhat better than they were in July. One of the principal causes of this business depression is the fluctuation of the currency, which is now 16.50 to 1—that is, $1 in United States gold is worth $16.50 in Guatemalan currency—and for a short time in July it was 24 to 1. This so increases the prices of imported articles that it is almost impossible for those employed on the currency basis to buy imported goods. This has had a tendency to very materially reduce the importations, and this to reduce the customs receipts, and to make this good the duty has been increased about 25 per cent, which adds an additional burden.

The cause of the depreciation of the currency of the country, which is issued by the banks under the supervision of the Government and, as originally intended and regulated, on deposit of certain approved securities, is now said to be due to its issue regardless of the proper guaranty.

It is understood that the Government is taking measures to put the currency on a firm basis again, and when this is done prosperity will return, for Guatemala is rich in resources.

Another thing that adds to the business depression is the low price of coffee and sugar and the high export duty on coffee, together with the avowed intention to increase this duty. These crops were good last year, and promise well for this year also, but the profits are very small.

OUTLOOK FOR AMERICAN TRADE.

In the past a very large proportion of the imports of manufactured articles into Guatemala have been from Europe, principally from Germany and England, very largely because of the fact that most of the merchants here are foreigners, and they claim the prices and terms of European houses are more favorable, although it is conceded the quality and style of their goods are inferior to those from the United States; the customers here look more to the price than to anything else. A favorable time to strike for our share of this trade is at hand, for the stocks in most of the stores are very low, and when the tide turns strongly for the better all will desire to stock up as soon as possible, and American goods can be landed here very much sooner than those from Europe.

Our exporters, to put themselves in position to avail themselves of this opening, should give exceptionally good prices and terms, because if they once get the trade they can hold it, and it is a profitable trade.

I look for better times here within a year, and when it does come conditions will improve very rapidly.

ALFRED A. WINSLOW,
Consul-General.

GUATEMALA CITY, GUATEMALA, *September 1, 1903.*

FOREIGN TRADE OF HONDURAS.

(*From United States Consul Moe, Tegucigalpa, Honduras.*)

The Government of Honduras has recently made public the official figures covering the importations and exportations for the first quarter of the fiscal year 1902–3.

No statistics by quarters of the preceding year are at hand, but the proportion of the first quarter of the fiscal year, if maintained through the next three quarters, will show a marked falling off in the volume of trade. For the previous year the importations amounted to $4,377,161.42, and at the present ratio the total importations will reach only $4,082,500.

It would seem that the unsettled conditions in the interior of Honduras were foreseen and shipments were held back in consequence; nevertheless the proportion of importations, as compared with the preceding year, is fair.

The exportations of 1901–2 amounted to $6,170,353.27; for the first quarter of 1902–3, to $1,454,079.32. At this ratio the exportations for the full fiscal year 1902–3 should approximate $6,000,000, which is only $170,353 less than for the year preceding. This showing is excellent, considering that 1901–2 was the banner year for the commerce of Honduras and that the approach of changes of administration in the fall of 1902 did much to discourage activity in trade with foreign countries.

The United States leads the list of importing nations, having entered imports to the value of $309,977.88 gold, or about 79 per cent of all the importations, paying thereon 72 per cent of all the revenue received. The United States received also from Honduras the great bulk of the exports, amounting to $347,570.78 gold, or about 60 per cent of the total, thus maintaining her average. England follows the United States in value of imports, and Germany is credited with all the exports destined for Europe, if we except consignments to British Honduras transshipped ultimately to England.

The exportation of fruit, nearly all of which is shipped to the United States, on the basis of the figures of the first quarter of 1902–3, should show an enormous increase in this industry, amounting to about 40 per cent. The value of coffee exportation has declined to a considerable degree, and this is true also of rubber. These last conditions are due to the low prices obtained, and the fact that the growing of coffee and rubber trees is at present largely a native enterprise, conducted without a view to commercial necessity.

Of the ports of entry, Amapala, on the Bay of Fonseca (Pacific), is the leading one, being the ocean terminal of the great highway to Tegucigalpa, the capital, and of the other large cities in the interior. Amapala is six days by sea from Panama and sixteen from San Francisco; but these periods include days allowed for a number of stops at various ports, both north and south.

Puerto Cortes is the most important harbor on the Caribbean Sea and does a thriving business in the exportation of fruits. The imports consist mainly of merchandise for the towns along the line of the railroad, which extends inland as far as Pimienta, some 60 miles from Puerto Cortes.

Summary of principal exports from Honduras during the first quarter of the fiscal year 1902–3.

Description.	Quantity.	Value.
Bananas...bunches...	909,721	$454,769.25
Coffee...pounds...	123,461	20,535.55
Mahogany...feet...	170,000	17,000.00
Cocoanuts...number...	3,854,668	117,403.78
Rubber...pounds...	12,245	11,930.25
Oranges...number...	1,532,700	15,327.00
Plantains...	...	8,183.00
Pineapples...number...	100	6.25
Sarsaparilla...pounds...	45,423	17,502.55
Skins, cattle...do...	204,147	61,819.02
Cattle...head...	12,579	305,840.00
Deerskins...pounds...	40,038	19,135.53
Tortoise shells...number...	40	200.00

ALFRED K. MOE, *Consul.*

TEGUCIGALPA, HONDURAS, *September 9, 1903.*

No 279—03——4

IMMIGRATION AND FOREIGN TRADE IN HONDURAS.

(*From United States Consul Moe, Tegucigalpa, Honduras.*)

The Government of Honduras contemplates a departure from former methods of its consular service, owing to a desire to increase its commerce and industries, as well as to improve the interior conditions of the Republic, by augmenting the number of inhabitants and landholders from foreign countries.

The first object is to be attained by directing the consuls to furnish information to the Government and the people of the Republic respecting the ways and means employed by the respective countries to which they are assigned to enhance the value of the trade and improve their industrial situation.

The second object is to be gained likewise by consular advice concerning the laws, regulations, and provisions governing the admission and disposition of immigrants for the best interests of the country in which they settle.

The Honduras consuls are also directed to encourage immigration to this Republic by publishing the advantages, etc., of settlement in Honduras and the Government's inducement to this end.

Accordingly, the following circular letter, dated Tegucigalpa, June 25, 1903, has been sent to the Honduras consuls:

> The Government over which Gen. Manuel Bonilla presides, wishing to further the progress of this Republic, desires that its officials abroad shall procure by such means as are available the immigration of proper persons for the purpose of engaging in agriculture or industry.
>
> To this effect you will make public in the periodicals of your several districts all official notes concerning the natural wealth and products of this Republic which shall be transmitted to you, form companies of foreigners for their exploitation, and make known the guaranties and exemptions under our laws.
>
> You will also advise—
>
> 1. Concerning the inducements which the nation to which you are assigned may have made to attract serviceable and profitable immigration, in order to gauge, by the results, the value of their adoption in this country.
> 2. Concerning the systems or methods of cultivating fruits which are or may be produced in Honduras, that they may be employed in this Republic with favorable result.
> 3. Concerning the practicability of acquiring in the country of your assignment a market for the products of Honduras which does not exist at present.
> 4. Concerning the system of popular instruction which prevails in that country.
> 5. Concerning the means which may have been employed for the improvement of agriculture, cattle breeding, mining, and other industries.

ALFRED K. MOE, *Consul.*

TEGUCIGALPA, HONDURAS, *September 5, 1903.*

ACQUIRING PUBLIC LAND IN HONDURAS.

(*From United States Consul Moe, Tegucigalpa, Honduras.*)

During the past few weeks many communications from residents of the United States have been received at this consulate, in which the writers request information and advice concerning the land laws of Honduras covering the acquisition of public lands either by preemption, rental, or purchase.

These communications have been answered by sending a copy of a translation of the laws in point covering the requests; but as there are many others, probably, desiring the same information, I annex hereto a copy of the laws mentioned.

Prospective settlers in this country should be cautioned that it is absolutely necessary to be provided with funds for subsistence and other living expenses, and that provision in this direction should be made to cover at least a period of twelve months.

The value of having a slight command of the Spanish language can hardly be overestimated, and the prospective settler will find many difficulties removed by even a limited vocabulary.

Large parcels of baggage should be avoided, as the interior transportation is carried on by mules and the expense of freight is heavy. Especially is this so during the rainy or winter season (May to December), when the animals can not carry as heavy loads as in the dry season. The average carrying capacity of a mule during the wet weather is 150 pounds; in the dry season this load may be increased to 200 pounds. The hire charges for mules vary considerably, but in general it may be figured that one mule will cost 10 pesos ($4) for 75 miles. Mozos, or men hired to take care of beasts, are paid at the same rate.

The cost of labor varies greatly, according to the locality; but the prices range between 75 centavos (30 cents) and 2 pesos (80 cents) per day for farm labor.

ACQUIRING LAND IN HONDURAS.

The lands of Honduras are classified into three divisions—national, municipal, and private.

In order to acquire national lands the party interested, or his representative, presents to the administrador de rentas (collector of revenue) of the Department in which the land is situated a denouncement specifying the limits and the name of the tract. Upon the determination of the land as national, by the duly constituted authority, a surveyor is nominated to measure the denounced land,

and after this has been done the administrador de rentas advertises the land for sale at public auction, fixing the day and hour therefor. The party making the denouncement is given the preference at this sale, and if his bid be not accepted as the highest the party securing the land reimburses the one making the denouncement for the amount of expense incurred in applying for the land. As soon as the sale is approved, the selling price must be paid.

The prices fixed are: Fifty centavos (20 cents) per manzana* for pasture land, 1 peso (40 cents) per manzana for agricultural land, and 2 pesos (80 cents) per manzana for land along the banks of navigable rivers or lakes connecting therewith at a distance of 1 league.

Further restrictions are made to classify land and determine its valuation as first class, such as those lands situated within 20 kilometers (12.4 miles) in a direct line from the sea, from a railroad built or in construction or likely to be built, from navigable rivers or lakes, or which in the opinion of the executive authority may be made so, as well as those agricultural lands which are situated within the same distance (20 kilometers) from a city or large town, from a mining center, or from cart roads extending to the coast, and such plots of ground as the Government may reserve to itself in concessionary grants.

The record of the denouncement, public sale, payment thereof, and certified copy of the transaction, together with the registry, etc. constitute the title to the property.

The Government may prohibit the sale of national lands on the shore of both oceans and to a distance of 2 leagues inland, as well as of the land on islands and keys.

Foreigners as well as natives may acquire a dominio util, or the usufruct, of national lands without purchasing them by petitioning the Minister of Fomento (exploitation) for a concession of land for plantations of coffee, cacao, rubber, vanilla, indigo, sugar, cotton, olives, ramie, bananas, plantains, cocos, oranges, and lemons.

The law known as congressional decree No. 50, of February 22, 1902, prescribes the methods and conditions for acquiring land in the district of Tela, on the Caribbean Sea.

Agriculturists and cattle breeders enjoy certain rights and immunities, such as exemption from military service and the free entry of machinery, hardware, and construction materials for houses, and free admission of breeding cattle and seeds.

ALFRED K. MOE, *Consul.*

TEGUCIGALPA, HONDURAS, *September 7, 1903.*

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*The manzana is a tract of land 100 varas square, and is equivalent to about 2 acres. The Honduras peso is worth 40 cents in United States currency at the present exchange.

LAND LAWS OF HONDURAS.

DECREE NO. 50.

1. The executive power shall cause all national lands in the district of Tela and all which may be included in paragraph 1 of article 30 of the law of agriculture, with the exception of those on which there may be ruins of ancient populations, to be measured and divided into lots of 25, 50, and 100 hectares (61.8, 133.5, and 247.1 acres) each and maps thereof filed.

2. Each lot shall have a number or name, and the boundaries thereof shall be duly marked.

3. The usufruct of said lots may be acquired by Honduraneans or foreigners domiciled in, or who intend to be domiciled in, the country without expense and without other formality than a simple written request made by the party interested to the administrador de rentas or his deputy or before such officer as the Government may designate.

4. The acquisition of these lots shall carry with them a personal title and, with the exception in the case of heirs, they shall not be transferable until a fourth section is under cultivation.

5. If any person seeks more than one lot he shall make petition to the Minister of Fomento, who, upon taking consideration of the resources of the petitioner, may concede or withhold titles. The executive power on conceding more than one lot shall not give title to cover an area of more than 500 hectares (1,235 acres). These lots shall be registered in the same manner as the others.

6. These lots are to be given preference for agricultural purposes, and cultivation thereon must begin within two years of the date of the concession.

7. The lessee of each lot shall pay an annual tax of 25 centavos (10 cents) for every hectare (2.471 acres), the payment to be made in advance on the 1st day of January; but on a concession obtained after the first day of the year, the tax shall be proportioned according to the time left until the last day of December. After cultivation has begun the annual tax shall be reduced to 10 centavos (4 cents) per hectare on land under cultivation. This tax is not to be increased during the next twenty-five years (*i. e.*, from February 22, 1903).

8. The lessee shall forfeit his title to his lots if cultivation thereon is not begun within two years from the date of the concession; also if the taxes remain unpaid upon maturity—provided that if a quarter part is under cultivation only the remainder shall be forfeited and the Government shall have the prerogative of collecting the taxes on the cultivated part.

9. At any time in which it shall be necessary or incumbent to condemn one or more lots, or parts thereof, for roads, railroads, wharves, landings for navigation or canalization, bridges, or other works of a public character, the lease shall cease, but the lessee shall be paid the value of his improvements on the part condemned, the valuation to be fixed by arbitration.

10. The lessee shall enjoy all the privileges and exemptions provided by the law of agriculture as soon as he shall begin his cultivation.

11. All lands adjacent to port towns and districts which in the opinion of the Government may be necessary for the future development of said localities, such as lands on which may be erected wharves, landings, or depots, shall be excepted from the general division of lots. Land space separating the lots shall remain subject to common use.

12. This law shall not alter or affect in any manner prior contracts or concessions.

13. The executive power shall make regulations for the enforcement of this law.

14. This act shall take effect from the date of promulgation.

Paragraph 1 of article 30 of the law of agriculture referred to in paragraph 1 of the decree reads:

> All lands belonging to the nation which are within 8 kilometers (4.97 miles) from the sea or from Caratasca or Brewers Lagoon, and all islands.

TRADE OF THE ARGENTINE REPUBLIC.

The American chargé d'affaires at Buenos Ayres, Mr. E. W. Ames, sends the following facts and figures in regard to the foreign trade of the Argentine Republic during the first six months of the calendar years 1902 and 1903:

The total imports of the Argentine Republic during the first six months of 1902 amounted to $51,243,230* and the total exports for the same period $105,203,781. The total imports during the first six months of 1903 amounted to $61,902,153 and the total exports for the same period $128,819,682. The increase of imports during the first six months of 1903, amounting to $10,658,923, together with the increase of exports, amounting to $23,615,901, show a total increase in foreign trade during the first six months of 1903 over the same period of 1902 of $34,274,824. The increase in imports was largely from the following countries:

Country.	1902.	1903.	Increase.
Germany	$6,662,159	$7,850,303	$1,188,144
Brazil	1,930,330	2,805,200	874,870
United States	6,297,312	7,148,922	851,610
France	4,528,086	6,022,776	1,494,690
Italy	6,385,522	7,260,058	874,536
United Kingdom	18,809,613	21,580,916	2,771,303

The principal items of imports for the two periods were:

Article.	1902.	1903.
Food stuffs:		
Animal	$630,866	$853,741
Vegetable	4,075,305	4,862,753
Tobacco	1,445,438	1,787,529
Wines	1,950,975	2,383,399
Woolen goods	2,910,432	3,292,269
Cotton goods	8,084,292	10,276,875
Other textile fibers	3,174,485	4,576,879
Chemicals and drugs	1,723,388	2,292,898
Lumber	3,217,182	3,200,245
Iron and manufactures of:		
Crude	4,956,226	5,678,273
Machinery and tools	738,757	1,729,982
Other manufactures of iron and steel	3,213,421	4,124,798
Crockery and ceramic products	5,039,660	4,938,219

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* Values are in Argentine gold; $1=96.5 cents in United States currency.

The increase in exports was largely to the following countries:

Country.	1902.	1903.	Increase.
Africa	$3,722,808	$6,037,632	$2,314,824
Germany	14,681,834	16,309,781	1,627,947
Belgium	9,082,333	12,040,033	2,957,700
France	17,297,765	20,752,792	3,455,027
Uruguay	1,418,172	2,329,792	911,620

There was a decrease in the exports to the following countries, which showed an increase in imports for the same period:

Country.	1902.	1903.	Increase.
United States	$5,671,041	$4,744,740	$926,301
Italy	2,252,231	1,967,011	285,220
United Kingdom	19,041,487	18,992,645	48,842

The principal articles of export for the two periods mentioned were live stock, wool, hides, etc., manufactured articles from animal products, agricultural products, wheat and corn, vegetable refuse, and wood and products therefrom. Hides were the principal export to the United States.

TELEGRAPH SYSTEM IN THE ARGENTINE REPUBLIC.

(*From United States Chargé d'Affaires Ames, Buenos Ayres, Argentine Republic.*)

The open-circuit system of telegraph is used in the Argentine Republic and the messages are received written on tapes, in conformity with the requirements of the telegraph law, for convenience in revision. The majority of operators receive by ear, but they must let the tape run for purposes of record.

For the first telegraph lines constructed in the country iron poles were used, made by Siemens Brothers in England. Since then the hard woods of the country (quebracho colorado, urunday, as well as some palms) have been used for poles.

The wires rest on porcelain nonconductors set on wooden cross-arms, which are fastened to the poles with iron clamps.

The manufacturers from whom instruments and line materials are purchased are: Siemens Brothers, of London, and Felten & Guillaume, of Germany (wire).

The amount annually expended for the maintenance of the national telegraph system is $78,000 national currency (about $33,500 United States currency).

New lines are projected to the extent of 9,200 kilometers (5,717 miles).

The extent of the telegraph system operated by the Government is now 21,885 kilometers (13,600 miles) and the number of offices in operation 515.

The extent of the telegraph lines belonging to railroads and to individuals under Government control is 27,003 kilometers (16,780 miles) and the number of offices in operation 996.

EDWARD WINSLOW AMES,
Chargé d'Affaires ad Interim.

BUENOS AYRES, ARGENTINE REPUBLIC, *August 6, 1903.*

CARRYING TRADE IN BRAZILIAN COMMERCE.

(*From United States Consul Kenneday, Para, Brazil.*)

In Manaos, as well as in Iquitos, trade with the United States is showing enormous and rapidly increasing growth. American goods are always preferred, even at a slightly increased cost. Every steamer that goes up the river carries a big cargo for those cities from which it is distributed to intermediate and far-distant points. This is a very important trade for the United States and lacks only good and reasonably cheap transportation facilities to become one of the most important factors in our commerce with South America.

United States exporters send to Para and other South American ports every year and every week and every day in the year a vast amount of produce, natural and manufactured. Unfortunately, however, nearly all this produce is transported to its destination in ships owned by British instead of American companies. The profits in this line of business are very large and should no longer be overlooked. American capitalists ought to push forward and get the bulk of the foreign transport trade. We produce all these things in the United States; we carry them to the coast on American railways and we put them on board ship at docks owned by American companies; but there, at present, our profits derived from handling these exclusively American products stop.

K. K. KENNEDAY, *Consul.*

PARA, BRAZIL, *September 9, 1903.*

COMMERCE AND INDUSTRIES OF BRITISH GUIANA FOR 1903.

(*From United States Consul Moulton, Demerara, British Guiana.*)

From official records and other available sources of information, sufficient data has been secured regarding the industrial and commercial activity of this country for the year ended March 31, 1903, and the four months succeeding to adduce the following conclusions:

There was a slight increase in the output of the soil, mines, and forests, consisting of sugar, gold and diamonds, balata, and timber, over that of the preceding year.

These products, which constitute the chief articles of export, were mostly distributed as follows, compared with 1902:

EXPORTS.

Country.	1902.	1903.
United States	$3,878,902	$3,761,176
United Kingdom	3,611,604	3,675,141
Canada	379,195	592,651
Other countries	365,897	404,890
Total	8,235,598	8,433,858

SUGAR.

The local market for raw sugar opened in October, 1902, at $1.75 per cwt. (112 pounds), which it is claimed was less than cost of production. However, prices advanced gradually until December, when sales realized $2.25. With few exceptions shippers closed out most of their stock at a profit. It was distributed as follows, compared with the previous year:

Country.	1902.	1903.
	Tons.	*Tons.*
United States	85,009	89,895
United Kingdom	12,868	16,326
Canada	7,773	13,777
Total	105,650	119,998

From January 1 last to July 31, including the May and June grinding, there were approximately 69,398 tons to be disposed of. Prices gradually eased off to $1.80 by the middle of July, advancing to $1.87 by the last of the month. The exports, compared with the same period last year, were as follows:

Country.	January to July—	
	1902.	1903.
	Tons.	*Tons.*
United States	41,556	31,780
United Kingdom	10,428	2,929
Canada	2,330	28,128
Total	54,314	62,837
Approximate amount on hand	....	6,561

It thus appears that the Dominion of Canada, during the period under consideration, very substantially increased her importations of raw sugar from this country, and markedly so during the last four months. The reasons are clear and the fact is of considerable importance. Canada heretofore has imported sugar largely from Germany, but owing to a dispute with that country a tariff duty was arranged discriminating against the German product. A preferential tariff rate of 33⅓ per cent favoring British colonial products already existed in the Dominion. Quotations during the past six months were abnormally low in New York, where from time immemorial the Demerara product has been chiefly marketed. Under these conditions Canadian importers sought what they required from Demerara and other British colonies in the West Indies, with the result of largely diverting, at least, Demerara shipments from their accustomed channels, as shown in the above statistics.

Local exporters were thus able to realize from one-sixteenth to one-eighth of a cent more per pound for their sugar than could be obtained in New York, and steamers plying regularly between the United States and this port have for several weeks past discharged their usual inward cargo and cleared out empty, while subsidized Canadian steamers and tramp vessels captured largely the tonnage.

IMPORTS.

The value of importations from all sources, considered as a whole, slightly exceeded those of last year. Local conditions have undergone no apparent improvement and moderate increases in valuation are immaterial. They are often due to the ordinary vicissitudes of trade and prices current.

The value of imports from the United States was $2,172,856, against $1,943,806 the previous year. Not since 1894 have our exports to the colony amounted to so much.

There were increased quantities of the following articles imported: Lumber, petroleum and other oils, staves and headings, machinery and materials for electric lighting and for the manufacture of sugar, cement, beef and lard, and boots and shoes, valued at $39,000, against $18,000 the previous year. The flour trade was normal up to March 31.

Importations of butter, cheese, corn meal, pork, oleo, tobacco, hardware, hay and grain, coal, and cotton textiles fell off.

Imports.

Country.	1902.	1903.
United States	$1,943,806	$2,172,856
United Kingdom	3,375,684	3,496,925
Canada	403,425	400,695
Other countries	502,180	512,191
Total	6,225,095	6,582,667

Our trade with the colony has steadily improved. For years the local exporter has found the most profitable market for his sugar in New York, and in return we have supplied this market with the flour and food stuffs required. Thus far this mutual exchange of commodities has been carried on without serious rivalry.

COMMERCIAL TRAVELERS.

The ordinance imposing a tax on commercial travelers visiting the colony, which was passed last year, has been repealed and no obstacles exist to that efficient method of promoting trade.

ATTEMPT TO DEVELOP COTTON PRODUCTION.

An organized effort is being made to reestablish this industry, which formerly flourished in the colony during the days of slave labor. A cotton-growing association has been formed in Berbice County. The locality has been divided into ten districts, and seed distributed and planted mostly by small farmers, though the managers of several sugar estates have also planted from 1 to 3 acres. It is estimated that from 800 to 1,000 people are planting. The scheme is to encourage a general cultivation of the staple throughout the district. Small prizes are offered—not for the best cotton, but the best cultivation.

Former experience demonstrated that the coast lands were admirably adapted to the purpose, and a splendid article was produced and the industry flourished until the close of our war of the rebellion, when prices fell off to an unprofitable figure and cultivation was abandoned.

While those who are promoting the enterprise are very sanguine of ultimate success, there are others who prophesy failure, for the reason, among others, that the black people can not be induced to combine in efforts to provide the necessary drainage, and it is questionable whether the government would appropriate money for the purpose without some guaranty that the people would, to some extent, help themselves.

It is thought that eventually the cultivation may be confined mostly to the front lands of the sugar estates, where indentured East Indian laborers would be available for the purpose.

GEO. H. MOULTON, *Consul.*

DEMERARA, BRITISH GUIANA, *August 12, 1903.*

PRODUCTION OF COTTON IN PERU.

(*From United States Minister Dudley, Lima, Peru.*)

I inclose herewith a copy and translation of a dispatch from the Peruvian minister at London to his Government, which has just been given publicity through the National Agricultural Society of Peru. The purpose of the publication, as will be observed, is to point out the expediency of increasing the production of cotton in Peru for British manufacturers, in view of the alleged forestalling of the American output destined for the English market.

IRVING B. DUDLEY, *Minister.*

LIMA, PERU, *August 22, 1903.*

PRODUCTION OF COTTON IN PERU.

The Peruvian Minister in London to his Government.

The English press during the last few weeks has been giving an account of the crisis at present affecting this country in consequence of the heavy purchases of cotton made of late by speculators from the United States, who, having monopolized the article, are in a position to demand exorbitant prices.

This combination has already produced serious results in Manchester—so much so that during the last few days many manufacturers have, through want of cotton, only been able to work during four days in the week, while others, who were expecting the arrival of new supplies, have found themselves compelled to suspend their work altogether for the present.

With reference to this state of affairs, according to information communicated to this legation by the consul of the Republic in Manchester, several manufacturers in that city have asked for information and statistics respecting the production of cotton in Peru, and more especially as to whether there existed in that country a sufficient number of laborers to attend to the cultivation on a larger scale. The consul, in view of these facts, has asked the legation to furnish him as often as possible with all the information and data on this matter that appears from time to time. The legation has done hitherto all in its power to comply with the consul's requests.

I think it would be convenient—and I would ask you to seriously consider this matter—to publish in English and distribute among the manufacturers of Manchester and other centers of the textile industries in England a pamphlet treating of the production of cotton in Peru and setting forth all the data which would be of interest to any parties who might wish to encourage the cultivation of the plant on a large scale.

I have no doubt that such a publication would produce magnificent results, and perhaps under the present state of circumstances the English manufacturers might, in view of the possibility of a similar crisis, determine to back up with their capital the cultivation of cotton in Peru.

URUGUAYAN COMMERCE AND PUBLIC WORKS.

United States Consul A. W. Swalm, of Southampton, England, under date of September 2, 1903, transmits a communication, printed in the London Times of September 1, from its regular correspondent at Montevideo, July 25, from which the following extracts are taken:

FOREIGN COMMERCE.

The gross statistics of the foreign commerce of this Republic for the first quarter of the current year (only just published) are more favorable than might have been expected, the general totals being as follows: Imports, $6,396,888; exports, $13,538,066—total commerce, $19,934,954. As compared with the same quarter last year, the imports show an increase of $565,900 and are above the average for the last six years; the exports show an increase of $2,018,423, reaching much the highest figure on record for the quarter, being ahead of 1900 and 1901 by some $4,000,000. This is mainly due to a large clip and good prices of wool. The exportation of agricultural products was below the mark, owing to the wheat harvest having been poor both in quality and quantity. On the whole a good start has been made commercially in the first quarter, which is generally the index for the rest of the year.

PUBLIC WORKS.

Government has recently adopted some secondary measures that deserve commendation. Among these may be mentioned drainage extension works in Montevideo and some of the principal towns of the interior; surveys for port and canalization works and transit improvements at Colonia and other points; steps for the establishment of veterinary stations and for combating the plagues of tick and "Texas fever," which of late have wrought great mischief among the live stock of the country; a tour of free lectures by experts on scientific and advanced methods of agriculture and stock farming; and arrangements for the distribution of seed wheat to improve the strain of wheat, which in the last two harvests has shown signs of marked deterioration. The contract has just been signed, after much obstruction and a period of gestation extending over nearly five years, for the introduction of electric traction on the principal group of tramways in this city, which are known as the Baring group, because they were capitalized and worked under the auspices of Baring Bros. & Co. The electrification is being carried out by English capitalists and engineers and will involve an outlay of about $1,000,000. Proposals are under consideration for the electrification of other tramway lines in the city, some with English and some with local capital.

FAILURE OF THE SAAZ HOP CROP.

(From United States Commercial Agent Twells, Carlsbad, Austria.)

The town and environs of Saaz, which are situated in my consular district, are famous for the excellent quality of hops grown in that neighborhood, and from there the principal breweries of Pilsen and Germany procure their supply of this staple. Large quantities of Bohemian hops from Saaz and Auscha, but chiefly Saazer Hopfen (so named), are annually exported to the United States. The reports lately received, however, indicate that the crop now being harvested in the Saaz district, owing to the heavy rains and cool weather, is one of the worst gathered for many years.

In 1901 the quantity grown in the Saaz district amounted to 190,000 meter centners (41,887,400 pounds). The quantity fell off in 1902 to 90,000 meter centners (19,841,400 pounds), and this year it will not reach 40,000 meter centners (8,818,400 pounds) if the reports are correct, owing to the unfavorable weather of the past summer.

Considering that the Buergerliche Breauhaus, at Pilsen, which is considered to be the principal concern which brews the so-called Pilsen beer, requires about 10,000 meter centners (2,204,600 pounds)—*i. e.*, one-fourth of the crop of 1903—there will be little export this year to the United States of genuine Saazer hops, and American breweries which are in the habit of using hops from Saaz should be informed of these facts. The prices have already risen by 100 per cent. Last year the price of hops from Saaz was 150 to 180 crowns ($30.45 to $36.54) per 50 kilograms (110 pounds); the prices quoted now are 330 to 360 crowns ($67 to $73) per 50 kilograms (110 pounds) and are likely to go higher.

There is a place near Saaz named Auscha, in the vicinity of which are likewise grown good qualities of hops and there will be a great demand for Auscha hops from those breweries in Germany which ordinarily buy Bohemian hops.

JNO. STEEL TWELLS,
Commercial Agent.

CARLSBAD, AUSTRIA, *August 31, 1903.*

COAL PRODUCTION OF BELGIUM.

(*From United States Consul McNally, Liege, Belgium.*)

The production of coal in Belgium is one of its richest resources. The pronounced capability of the miners, experts for generations, brings from the earth's recesses an annual production of about 23,000,000 tons. The production for the five following years was: 1890, 20,000,000 tons; 1895, 20,000,000 tons; 1899, 22,000,000 tons; 1900, 23,000,000 tons; and 1902, 23,400,000 tons.

COAL IMPORTS AND EXPORTS.

Coal is imported into Belgium for various purposes, including that of coke making. In 1902 the imports were: From Germany, 2,610,565 tons; from England, 642,000 tons; from France, 437,000 tons; from all other countries, 62,691 tons; total imports, 3,772,256 tons.

Belgium exports some coal to Germany, but the principal country of export is France.

The importation of briquettes—a composition of coal dust, fire clay, and tar—amounted to 44,000 tons in 1902, of which 39,000 tons came from Germany.

The importations of coke in 1902 amounted to 278,000 tons, of which 20,000 tons came from France and 258,000 tons from Germany.

BELGIAN COAL FIELDS.

The Provinces of Liege and Hainaut form the richest coal region of Belgium.

Up to the present Belgium's coal fields have been located in a tract of land contiguous to the valley of the Sambre and Meuse rivers, passing through the country from west-southwest to east-northeast, the fields being widest in the west. Recent investigations have located another promising coal field in the north of Belgium, known as the Campines, which are now being prospected with a view to their early development.

COKE PRODUCTION.

The production of coke in Belgium in 1902 amounted to 1,848,000 tons.

Coke is obtained by distillation in ovens of various construction, according to the quality of coal used. The gas produced is used for heating the ovens. One and three-tenths tons of coal are required to produce a ton of coke. The Copee ovens are principally used. The by-products are sold, as sulphates of ammonia, for agricultural purposes. The tar is sold to refining works.

COST OF MINING.

The cost of mining a ton of coal is between $1.93 and $2.51, according to location of the mines. Charges f. o. b. boat are 58 cents. The mines are drift and shaft. The shaft varies from 1,312 to 3,937 feet in depth, while the drift extends as far as 1.8 miles. The Government receives 3½ per cent of the gross profits.

MINING LAWS AND REGULATIONS.

The mines are owned and operated by private companies or individuals under special legislation. According to the law of 1810—still in force—grants in perpetuity are made by the Government. By the grant the owner obtains a title to the mine distinct from the surface and which can be mortgaged separately from the surface. The operation of the mines is under Government supervision, whose powers are delegated to a board, the members of which are selected by the State. The liability for damage to the surface or to the appurtenances thereon attach to the owner of the mine.

Mine owners are compelled not only to pay certain fixed revenues to the Government, but also to the owners of the surface, which latter sum is fixed by the State in its deed of concession and can not be less than 5 cents per 2.471 acres, together with 3 per cent of the net output.

The mines are not subject to a tax, as are commercial enterprises, and pay no license, but must pay annually the sum of $1.93 per 0.386 square mile, together with an amount, fixed annually by the Government, not to exceed 5 per cent of the production. The budget laws, however, invariably fix the amount at 2.5 per cent.

MINERS' WAGES.

The mine owners do not furnish dwelling houses for their workmen. There are in Belgium 134,000 miners, of whom 98,800 are employed underground and 35,200 on the surface. The average wages of miners are $273 per year. Compared with other industries, the wages of the coal miners are relatively high.

Under recent legislation women are forbidden to work in the mines. They are still employed on the surface, leveling coal, etc., but their employment in and about coal mines is being gradually done away with.

RELATIONS BETWEEN OPERATORS AND EMPLOYEES.

Strikes in Belgium are not of common occurrence. The relations between the operators and their employees are most amicable. The formation of arbitration boards to pass on matters of dispute have had good effect. This is particularly so in the collieries of Mariemont and Bascoup, whose board of conciliation is famous.

JAMES C. MCNALLY, *Consul.*

LIEGE, BELGIUM, *August 27, 1903.*

FRENCH TARIFF CHANGES.

(From United States Consul Haynes, Rouen, France.)

After being adopted by the Senate and Chamber, the following law has been signed and promulgated by the President of the French Republic, to be in force from July 31, 1903:

Article.	Unit.	General tariff.		Minimum tariff.	
		Francs.		*Francs.*	
Beeves (cows and steers), bullocks, and heifers.	100 kilograms (live weight).*	30.00	$5.79	20.00	$3.86
Bulls	do	20.00	3.86	20.00	3.86
Calves and sheep	do	40.00	7.72	25.00	4.825
Hogs	do	25.00	4.825	15.00	2.895
Lambs of 10 kilograms and over and sucking pigs of 15 kilograms and under.	per head	4.00	.772	2.25	.43425
Goats	do	4.50	.8685	3.00	.579
Kids	do	2.00	.386	1.50	.2895
Meats:					
Fresh mutton and pork	100 kilograms	40.00	7.72	25.00	4.825
Fresh beef, salted pork, ham, beef, and lard.	do	50.00	9.65	35.00	6.755

* 100 kilograms=220.46 pounds.

THORNWELL HAYNES, *Consul.*

ROUEN, FRANCE, *August 26, 1903.*

FRENCH EXPORTERS' CRUISE TO THE LEVANT.*

(From United States Consul Ridgely, Nantes, France.)

French merchants and exporters are beginning to feel that they must take prompt and active efforts to meet the competition which Germany and other industrial nations have forced upon them in the Levant—a region in which, until recent years, France has enjoyed almost a monopoly of many of the leading imports. With the idea of more closely studying the situation, the national "Comité d'organisation des Croisières de reconnaissance commerciale" (committee for the organization of cruises of commercial inspection), composed of some of the leading merchants and exporters of France—including the presidents of the boards of trade of Lyons, Nantes, Roubaix, Bordeaux. Havre, Tourcoing, Rheims, Rouen, Dunkirk, and other important cities—has organized a cruise to the principal markets of the Levant, in which many leading French exporters will personally take part. A large and fine steamship, the *Isle de France*, has been chartered by the committee, and with its distinguished gathering of business men aboard will leave Marseilles on the 18th of next October for Constantinople, Broussa, Mytilene, Smyrna, Saloniki, Piræus, and Athens. Arrangements have been made at each port for brokers, chosen by the several chambers of commerce, for each line of trade, respectively, to meet the ship on arrival and enable the visitors to acquaint themselves with the needs of the market by personal inspection. It is believed that in this way the exporters will learn more of the exact situation and trade prospects in a few weeks than they could in years by correspondence. The distinguished visitors will be under the special care, in the several important centers enumerated, of the French consuls, the French chambers of commerce, the Comptoir National d'Escompte de Paris, the Ottoman Imperial Bank, the branches of the Credit Lyonnais Bank at Constantinople and Smyrna, and the Banque de Credit Industriel de Grece at Athens.

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*A report on this same subject, dated September 3, 1903, was received from United States Consul Atwell, of Roubaix.

The cruise will be personally conducted by an inspector of the Ottoman Imperial Bank of Constantinople, who, during the course of the voyage, will deliver an address on the economic conditions of the Ottoman Empire and the Turkish business system. The visitors will spend eight days at Constantinople. In commenting upon this fact a leading journal of Nantes says:

> Everybody should appreciate the great importance of Constantinople as a market for all our industrial and alimentary products. M. Giraud, the distinguished president of the French Chamber of Commerce, has for a long time warned us against the growing competition of other industrial nations, and it is now high time for our exporters to wake up and devote their best energies to the retention of the market.

From Constantinople the visitors will go to Broussa, the seat of the Turkish silk-spinning industry, for the purpose of visiting the great bazaar there and acquainting themselves with the form and character of the numerous manufactured articles which are marketed in the region of which Broussa is the center of distribution. After leaving Broussa they will spend three days at Smyrna, where they will pay particular attention to the considerable and constant demand for dry goods, furniture, saddlery and harness, agricultural implements, and preserved food products. From Smyrna the cruise leads to Saloniki, the second port of Turkey and a great distributing point for all agricultural products and the manufactured articles of Saxony and the upper Danube country, such as cheap cotton and woolen stuffs, china and glass ware, all cheap household articles, hardware, leather, etc.

The cruise will terminate at Piræus and Athens. An industrial journal says, in this connection:

> Piræus has become a very important and rich seaport, where all the industrial products of the West are now sold in large quantities for distribution throughout Greece and the surrounding islands, such, particularly, as ready-made clothing for men and women, household linen, tools, machinery, food products, eggs of silk worms, flour, coffee, firearms, ammunition, etc. Athens, the home of much wealth and numerous millionaires, has also become a good market for high-class manufactured articles of all sorts. She buys from the West prepared skins, fine linen, silk and satin dress stuffs, lace and lace trimmings, fine underwear for both sexes, articles de Paris, silk parasols, head wear, furniture, objects of art, bric-a-brac, and ornaments.

The prospective excursion is attracting much attention throughout the whole of industrial France, as is evidenced by long and interesting articles concerning it in the various journals.

BENJ. H. RIDGELY, *Consul.*

NANTES, FRANCE, *August 24, 1903.*

SUGAR IN FRANCE.

(From United States Consul Haynes, Rouen, France.)

Beginning to-day in France, sugar which has heretofore sold for 1.10 francs (21.23 cents) per kilogram (2.2046 pounds) will be sold for 70 to 75 centimes (13.51 to 14.475 cents). This reduction is due to a lowering of the internal-revenue tax from 64 francs to 25 francs ($12.352 to $4.825) per 100 kilograms (220.46 pounds), a result of the Brussels conference, wherein the agreement was made by France, Germany, Austria, Hungary, Belgium, Spain, England, Italy, the Netherlands, and Sweden to suppress all direct and indirect premiums accorded sugar exporters, thus reducing by nearly $10,000,000 the annual income of the French sugar industry.

Spain and Italy have built sugar factories which will probably supply their peoples in the near future. What, then, will be done with the surplus production of France, Germany, and Austria? The output of France is nearly double that of its consumption, and the Government has been busy since the object of the Brussels sugar conference threatened to become a reality devising some means to dispose of this excess. The simplest way seemed the best—to lower the internal-revenue tax that the people might buy sugar cheaper and thus buy more, on the same basis that a reduction of postage increases the buying of stamps. England furnishes an example of this. In 1848 in that country the internal-revenue tax amounted to $5.95 per 100 pounds, at which time the consumption per inhabitant was 25 pounds. Because of successive reductions of this tax, until 1874, when all tax was removed, the consumption of sugar doubled. To-day it has quadrupled, being 100 pounds per head. France does not hope for such results as this, as an Englishman drinks sweetened tea much after the manner a Frenchman drinks wine; but it is certain that home consumption will considerably increase. In Gers, a part of southwestern France, purely agricultural, and wherein there are no fiscal taxes, the individual consumption is exactly the same as in Switzerland—55 pounds per inhabitant.

At present in France each inhabitant consumes not quite 36.75 pounds. To consume the total production of the country this amount must be increased to 66 pounds, an increase which, if not impossible, will at least take many years to attain; during which time the sugar factories, beet-root culture, the labor employed in this industry, and the receipts from exports must all suffer their part of the burden.

THORNWELL HAYNES, *Consul.*

ROUEN, FRANCE, *September 1, 1903.*

FLOWER CULTURE FOR DISTILLING IN SOUTHERN FRANCE.

(*From United States Vice-Consul Piatti, Nice, France.*)

A considerable number of inquiries have been received at this consulate during the past few years touching the cultivation of flowers for purposes of distillation. They indicate that the writers are not at all informed as to this branch of industry, and I have thought that a special report on the subject would be of service.

CULTURE.

Land having a southern exposure is invariably chosen, and terraces upon hillsides, of which there are very many in this mountainous district, have often given the best results. The ground is well dug and well manured (artificial products for enriching the soil have as yet been used only to a limited extent); beyond this no special treatment is used, cultivators proceeding as with ordinary crops. In exposed places precautions are taken to cover the plants during

December and January, when frosts are liable to occur. These are very light and never sufficient to affect the roots of the plant, and the coverings are intended to protect the blossoms, which during the winter season are sold to florists and are sent to the northern cities of Europe. Roses and other perennial plants are cut down, dug around, and manured in September. The winter crop of blossoms, coming from November to February, is sold to florists. The plants rest until about May, when a second crop of blossoms is produced, which is sold for purposes of distillation. As a protection against insects and diseases, sulphur, lime, and the Bordeaux mixture for vines are generally the only preventive measures used.

KINDS OF PLANTS.

The popular names of the plants used for the purpose of distillation, together with their botanical names and the months during which they are harvested for that purpose, are as follows:

Popular name.	Name in English.	Botanical name.	When harvested.
Violette de Parme	Parma violet	Viola odorata	February and March.
Cassie	Acacia	Acacie farnesiana	October, November, and December.
Jonquille	Jonquil	Narcissus jonquilla	April.
Réséda	Mignonette	Reseda odorata	June and July.
Roses	Roses	(Various, see elsewhere)	From April 20 to June 10.
Fleurs d'orange	Orange flowers	Citrus bigaradia rosso	From April 15 to end of May.
Jasmin	Jasmine	Jasminium grandiflorum	From July 20 to October 15.
Tubéreuse	Tuberose	Polianthes tuberosa	From August 15 to October 15.
Œillet	Pink, or carnation.	Dianthus caryophillus	June and July.

PRICES OF THE BLOSSOMS.

The prices paid for the different kinds of blossoms vary naturally with the supply. Very high prices range only when, for some reason or other, any special crop fails. As a general rule, the crops, being of a very perishable nature and requiring to be utilized as soon as practicable after being picked, are sold at prices fixed by the distilleries themselves. The producers are therefore more or less at the mercy of immediate buyers in the district, as the loss through spoiling, freights, and other expenses would be very serious, even if it were practicable to forward the crops for long distances to other markets.

The market of Grasse being the principal one, I give below the prices paid per kilogram (2.2046 pounds) for these blossoms during the past six years. It should be noted that these prices are for the bare blossom alone, and in the case of roses for the bare rose leaves.

Description.	1898.	1899.	1900.	1901.	1902.	1903.
Parma violet	$0.53	$0.43	$0.53	$0.43	$0.43	$0.48
Acacia	.39	.62	.48	.81	1.15	1.15
Jonquil	.39	.62	.82	1.02	.48	.76
Mignonette	.19	.24	.24	.24	.24	.19
Roses	.10	.11	.16	.19	.15	.13
Orange flowers	.10	.09	.12	.17	.10	.09
Jasmine	.27	.29	.48	.57	.67	....
Tuberose	.33	.33	.48	.43	.48	....
Pink, or carnation	.06	.06	.06	.06	.07	.06

All these blossoms are used in the new system of distillation known as the "enfleurage system," or absorption by grease. Some of them—roses, orange flowers, and a limited amount of jasmine—are submitted to the old process of distillation.

I regret that I have been unable to ascertain the approximate quantity used at Grasse, but statistics of this kind, even if they exist at all (and in this case they do not), are very difficult to procure.

This year, in the case of orange flowers, the distillers fixed a price of 6 cents per 2.2046 pounds for the crop, and in many sections proprietors and cultivators preferred to lose their crop, as the price did not cover the expenses of picking and sending to market.

Referring to the Nice market, I may say that the Rose de Mai is the one used principally for distilling. Of late years, however, a quantity of Bobrinski roses and Paul roses have been used. The quantity of Roses de Mai distilled annually here is about 120,000 pounds. The price per kilogram (2.2046 pounds) has varied for years between 10 and 18 cents—this last price in 1901. This year the price was 13 cents.

The following table shows the annual production and the prices paid per kilogram (2.2046 pounds) in the Nice district during the years 1898–1903:

Description.	1898.		1899.		1900.	
	Production.	Price.	Production.	Price.	Production.	Price.
	Pounds.		*Pounds.*		*Pounds.*	
Violets	28,000	$0.53	32,000	$0.43	30,000	$0.53
Acacia	2,000	1.06	1,800	1.23	3,100	1.06
Jonquil*	....	....	....	....	....	....
Mignonette	4,800	.19	2,800	.21	4,400	.19
Orange flowers	23,000	.11	260,000	.09	200,000	.13
Jasmine	14,000	.24	16,000	.29	15,000	.29
Tuberose†	....	....	....	....	....	....
Pink, or carnation‡	....	....	....	....	....	....
Orange leaves§	....	....	....	....	....	....

* About 1,400 pounds annually, at 57 to 95 cents per 2.2046 pounds.

† Tuberoses, about 6,000 pounds annually, at contract price of 39 cents per 2.2046 pounds.

‡ Pink, or carnation, 35,000 to 50,000 pounds annually, at an average price of 6 cents per 2.2046 pounds.

§ Orange leaves, 150,000 to 200,000 pounds annually, at about $1.90 per 220 pounds.

Description.	1901.		1902.		1903.	
	Production.	Price.	Production.	Price.	Production.	Price.
	Pounds.		*Pounds.*		*Pounds.*	
Violets	38,000	$0.43	30,000	$0.43	24,000	$0.48
Acacia	2,000	1.06	1,600	1.15	....	....
Jonquil[*]	....	....	....	....	....	....
Mignonette	4,000	.21	5,400	.19	6,800	19
Orange flowers	180,000	.18	290,000	.10	230,000	.10
Jasmine	16,000	.49	2,000	.57	(†)	(†)
Tuberose[‡]	....	....	....	....	....	....
Pink, or carnation[§]	....	....	....	....	....	....
Orange leaves[‖]	....	....	....	....	....	....

[*] About 1,400 pounds annually, at 57 to 95 cents per 2.2046 pounds.

[†] Harvest in progress.

[‡] Tuberoses, about 6,000 pounds annually, at contract price of 39 cents per 2.2046 pounds.

[§] Pink, or carnation, 35,000 to 50,000 pounds annually, at an average price of 6 cents per 2.2046 pounds.

[‖] Orange leaves, 150,000 to 200,000 pounds annually, at about $1.90 per 220 pounds.

Regarding Mentone, there is but one distillery there, and the only products distilled are orange leaves and flowers. The average price paid for young leaves is 8 cents per 2.2046 pounds and 10 and 12 cents for the flowers. The aggregate crop of both may be calculated at about 350,000 pounds, and the entire output of the distillery is contracted for by a well-known German manufacturer of eau de cologne.

ROSE GERANIUM LEAVES FOR DISTILLING PURPOSES.

I have preferred to treat this subject separately, as it has come to my knowledge that official inquiries on the subject are being made by representatives of other governments. This crop has attained large proportions in this district and the annual production now reaches not less than 3,300,000 pounds. I have also ascertained that 1 hectare (2.471 acres) will produce 55,000 to 66,000 pounds of leaves, which are sold at from $1.14 to $1.33 per 220 pounds. The product in pure essence of each 2,204 pounds is 2.2 pounds. A small quantity is annually imported into Grasse from Italy, about 65,000 pounds are brought from Africa, and 55,000 pounds from Ile de la Réunion, near Mauritius. It should be borne in mind that what is known as "Turkish geranium" in the United States is simply a superior quality of essence of *Palmarosa* manufactured in British India and is not geranium at all. In point of fact I can not ascertain that any essence of geranium is manufactured in Turkey.

MINT FOR DISTILLATION.

Experiments as to the cultivation of mint for distilling are going on and a certain amount of land is being cultivated; but I have not yet sufficient data to report thereon. The matter will be referred to in a future report.

ATTILIO PIATTI,
Vice and Acting Consul.

NICE, FRANCE, *August 25, 1903.*

MANUFACTURE OF PERFUMES IN GRASSE.

(*From United States Consul-General Guenther, Frankfort, Germany.*)

The following data may interest Americans, especially in southern California:

The city of Grasse, the most important industrial place of the Riviera, is widely known on account of its perfume manufacture. At present 35 concerns making essences of flowers are in operation there. The average consumption of roses for that purpose is about 2,650,000 pounds and that of orange flowers about 660,000 pounds per year. The annual sale of these essences amount to $1,000,000. Vallauris has nine such factories.

The most important product of this industry is oil of neroli, made from the flowers of the bitter orange. A kilogram (2.2 pounds) of this oil is worth $60. From the peel of the bitter orange oil of orange is made. The peel of the sweet orange is seldom used for making oil. The manufacture of essence of roses is also very extensive.

The so-called oil of roses is manufactured from the grass *Andropogon schoenanthus.*

The flowers of the large-flowered jasmine yield the oil of jasmine. A hectare (2.471 acres) planted with jasmine is said to yield a yearly product worth $3,000, but requires a great deal of work. Filled violets formerly brought from $1 to $2 per kilogram (2.2 pounds); at present, however, they bring only 50 cents. A kilogram of essence of violets is worth from $4.50 to $5.

Oil of geranium is produced from the flowers of *Pelargonium capitatum.* The flowers of the tuberose, of the jonquil, and of a species of narcissus are manufactured into essences; also the leaves of the citronella plant, the root of the *Iris florentina* (violet root), the patchouli flowers, sandalwood, etc.

Fortunately for many places in the Riviera, the consumption of these essences has not decreased in late years.

Although many of these perfumes are bad for the nervous system, others are recognized as antiseptics. It is claimed that the typhus bacillus is killed in twelve minutes by essence of cinnamon, in thirty-five minutes by essence of thyme, and in eighty minutes by essence of patchouli.

RICHARD GUENTHER,
FRANKFORT, GERMANY, *September 5, 1903.* *Consul-General.*

GERMAN TRADE NOTES.

(From United States Consul Warner, Leipzig, Germany.)

Schoenwald China Factory.—The stockholders of the Schoenwald China Factory, which is located at Schoenwald, a village of about 1,500 inhabitants, near Selb, upper Franken, Bavaria, have decided to increase the capital stock from 1,000,000 marks ($238,000) to 1,600,000 marks ($380,800) for the purpose of enlarging their output. The factory before its incorporation on February 5, 1898, was the property of J. N. Müller, of Schoenwald. At present it employs over 435 hands.

Lime industry in Germany.—One of the reasons why the lime industry has increased so materially in Germany during the last few years is because of the rich quality of its limestone deposits. A large quantity of Gera lime, the annual production of which amounts to over 2,000,000 marks ($476,000), is shipped to Bohemia. One firm is contemplating increasing its capacity to such an extent that Gera will have one of the largest lime kilns in Germany.

German corset prices.—At a meeting of German corset manufacturers, which was held at Cassel on the 15th of September, 1903, it was decided to make a general increase in the price of their articles, in consequence of the prevailing high price of cotton.

New blast furnace in Germany.—At Meiderich, a flourishing city of 33,000 inhabitants in the Province of the Rhine, a new blast furnace is being built by the Meiderich Blast Furnace Company. The company, which was organized on March 15, 1902, taking over the plant belonging to August and Joseph Thyssen, has a capital of 1,500,000 marks ($357,000). At the time it was organized it had only one blast furnace. A second, however, having been completed, has just been fired up, and work has been begun on still another furnace.

Profitable German herring fishery.—At the annual meeting of the stockholders of the Emden Herring Fishing Company, of Emden, which was held in that city on the 12th of September, 1903, it was decided to pay a dividend of 20 per cent, the largest this company has ever paid since it was organized in 1872. The company has a fleet of 31 boats, 30 of which are sail vessels and the other a steamer. In 1900 its herring catch, which is made in the North Sea—for the most part off the coast of Holland—amounted to 20,945 metric tons, worth 740,615 marks ($176,266.37); in 1901, 30,444 metric tons, valued at 855,066 marks ($203,505). In 1902 it was even larger.

Increase in price of German linen yarns.—The flax spinners' association of western Germany has just decided to increase the price of all yarns 50 pfennigs (11.9 cents) per package. This action is taken because of the prevailing high prices of the raw material.

Consolidation of Wurttemberg breweries.—The Baeren and Storchen breweries, which are located at Ravensburg, a city of about 13,000 inhabitants in the southern part of the Kingdom of Wurttemberg, near the Boden-See, have been consolidated into one stock company. The capital of the new company is 1,000,000 marks ($238,000). The Baeren brewery will be discontinued, while the Storchen will be considerably enlarged and fitted with the most modern equipment.

Consolidated chocolate and cocoa company in Berlin.—The firms of Hoffmann & Tiede and Felix & Sarotti, of the city of Berlin, have just consolidated, forming a stock company, under the name of Sarotti Chocolate and Cocoa Company, with a paid-up capital of 1,500,000 marks ($357,000). It proposes to considerably enlarge its plant, in order to manufacture on an extensive scale.

Ivory-nut button factory in Saxony.—It is reported that the ivory-nut button factory located at Hütten, a village of about 850 inhabitants near Koenigstein, Saxony, after having been shut down for a long time, is to resume operations. To start with, it will give employment to 60 hands, a matter of no little importance to that community, where the industrial conditions appear to be still far from satisfactory.

BRAINARD H. WARNER, Jr.,
LEIPZIG, GERMANY, *September 18, 1903.* *Consul.*

GERMAN HOME AND FOREIGN TRADE NOTES.

(From United States Consul Warner, Leipzig, Germany.)

Capital in Chile.—A joint-stock company, with a capital of 5,000,000 marks ($1,190,000), has been organized at Valparaiso, Chile, for the purpose of securing control of the water power, erecting an electric light and power plant, and taking over the horse-car lines. The largest stockholders in this company are German firms, viz, Siemens-Schuckertwerke, Allgemeine Elektrizitätsgesellschaft, Die Union Elektrizitätsgesellschaft, and a group of banking houses, to which the Berliner Handelsgesellschaft, the Deutsche Bank, and the Diskontogesellschaft belong.

Locomotives for Japan.—It is reported that a German firm has just been awarded a contract from Japan for locomotives, only after very keen competition, however, with several English firms. American locomotives are regarded by many as the best in the world. Why, then, is Germany apparently getting more than her share of foreign orders? She is at present busy upon orders from Italy, Russia, and Japan. Is it because American locomotive shops are still rushed with orders? It has not been so long ago that the firm of Kitson & Co., Leeds, England, was given an order for locomotives by the Sudanese Railroad simply because this firm was prepared to fill the order within five or six months, while an American firm could not even promise to do so in twice that length of time. The Sudanese Railroad is at present using American locomotives, and with such success that it was reluctant to go elsewhere for new ones.

Acetylene in the Argentine Republic.—The Berlin Chamber of Commerce informs German acetylene firms that there is an opportunity for them to do business with the Argentine Republic. It seems that the experiments which the Argentine Government has been making with acetylene lighting have not been altogether satisfactory. The trouble has been caused by the jets becoming easily clogged. What that Government wants is a burner that will consume from 4 to 5 quarts of acetylene per hour and continue burning two to four months without becoming clogged, and that when a stoppage does occur it will not take place suddenly, but slowly, being noticeable several weeks beforehand.

Electric lights for the palace at Peking.—It is reported that a Hamburg firm has received an order to equip the Chinese Emperor's palace at Peking with electricity. For this purpose a dynamo with four steam engines and 16 transformers will be required. Not only is an order of this kind important in itself, but the prestige it will give German industries in that country will be very considerable.

The herring trade and duty thereon.—The Emden Fishermen's Union, in answer to a Government question as to whether or not it would be advisable to increase the duty upon salted herring, has replied in the negative. Under the present tariff raw herrings are free of duty, while salted ones in barrels pay a duty of 3 marks (71 cents) per barrel. In the year 1902 there were 1,577,379 barrels of herrings, valued at $11,874,534, imported into Germany; 756,547 barrels, valued at $5,741,036, coming from Great Britain; and 451,464 barrels, valued at $3,446,478, from the Netherlands. In the same year the total export of herrings from Germany was only 3,294 barrels, valued at $73,066.

Testing building material.—It has just been decided to hold the fourth international conference for testing building material next year at St. Petersburg, Russia. The exact date of the meeting has not yet been determined, but it will probably be held in the month of August, 1904. Herr Fetmager, professor of the technical high school at Vienna, Austria, has been chosen president of the conference, and as vice-presidents Professor Martins, of the University of Berlin, and Prof. N. A. Belelinsky, of the St. Petersburg Department of Public Works, have been selected.

Electric railway in Italy.—The Mediterranean Railroad of Italy, in conjunction with a number of foreign firms—for the most part German—is contemplating building an electric railroad from Rome to Naples. For this purpose, it proposes to ask the Government, in the near future, for the necessary concession. This road will be about 130.5 miles in length, and the estimated cost thereof $19,300,000.

State potash mine in Prussia.—The Prussian Government has at last obtained permission to open a State potash mine at Bleicherode, a small town of about 4,000 inhabitants in the district of Sangerhausen, Harz Mountains, Province of Saxony. The Government recently obtained the mining rights to a tract of land of 2,188,970 square meters (23,552,317 square feet) in area. It petitioned the Imperial Department of Commerce and Industry for a mining concession. This, however, was refused. Prussia obtained this concession subsequently, nevertheless, with the assistance of the Erfurt District Mining and Inspection Board, to which it appealed.

Electric cars for Argentina.—The Wagenbauanstalt und Wagenfabrik für elektrische Bahnen, formerly W. C. F. Busch, in Hamburg, has just received an order to build electric cars for the Buenos Ayres Electric Street Railway Company. It was recently reported in the German press that this concern was to build electric cars for companies in the United States. The company has informed me, however, that there was no truth in the report.

Alcohol for the Netherlands.—The Dutch Government has refused to give its sanction to a bill to increase the tax upon alcohol, as it was requested to do. During the year 1902 over 3,000,000 marks' ($714,000) worth of wine, beer, and alcohol was exported to Holland from Germany.

BRAINARD H. WARNER, Jr.,
Consul.

LEIPZIG, GERMANY, *September 3, 1903.*

TO MAKE BERLIN A SEAPORT.

(From United States Consul-General Hughes, Coburg, Germany.)

The Berliner Tageblatt has recently published an article on "Berlin als Seestadt" (Berlin a seaport town), some interesting particulars of which I submit to the Department.

The idea of connecting Berlin with the Baltic by means of a canal and at the same time to turn the capital city into a seaport into which even the largest class of ocean steamers could enter with perfect ease at any time was first conceived about twenty years ago by Strousberg. In a pamphlet, which on its appearance created a sensation, he communicated his daring idea to the public, proving, both from a technical as well as a financial standpoint, that his scheme could be carried out. He also showed the many economical advantages that it would bring to Berlin and the neighboring districts. At that time, however, the German public was not ripe for such a bold idea and treated it as the speculation of a dreamer, but the idea begins to be considered feasible. The Tageblatt says: "In view of the American danger which threatens our commerce and industries, its carrying out appears to us as—one would almost like to say—an unavoidable necessity." To what degree this latter idea has gained ground is best illustrated by the various projects of the Prussian Government with regard to a number of canals, one of the most important of which is that to connect Berlin with Stettin. It is true that the Berlin-Stettin canal, as now planned, will not make Berlin a seaport, but the first step toward the accomplishment of Strousberg's scheme will be made when the bill recommending that it be built shall have been accepted by the Prussian Diet and put into execution.

The water traffic of Berlin has been very important for many years back, but nobody would have predicted that it could ever develop to such an extent as shown by the present official statistics on water traffic. The water traffic around and about Berlin must be counted among the most important of the whole European continent. In comparison to the traffic done on the rivers Rhine and Danube, that of the much smaller Spree is simply marvelous and almost incredible. In 1899 not less than 10,900 passenger steamers, most of them probably in the service of Berlin excursionists, departed from and arrived at Berlin. In the service of the goods traffic there were employed 34,271 towing steamers, 1,710 goods steamers with a total tonnage of 107,895 tons, 70,266 sailing vessels—among them the well-known Spreekähne (large river boats)—with 6,360,354 tons of cargo, and last, but not least, 117 unloaded goods steamers and 30,506 unloaded sailing vessels. The timber contained in 4,172 rafts must not be forgotten, so that the total goods traffic amounts to about 5,500,000 tons.

There can be no doubt that the people of Berlin have understood how to develop the traffic on their comparatively small river to its present immense extent, and considering that this traffic is steadily increasing year by year it would seem as if the time for making Berlin a seaport town is not very far distant.

OLIVER J. D. HUGHES,
Consul-General.

COBURG, GERMANY, *August 22, 1903.*

GERMANY'S TRADE IN DYES AND CHEMICALS.

(*From the Textile Mercury of August 29, 1903.*)

In recent years Germany has rapidly advanced to first place among the countries producing dyes and chemicals. Her success in the manipulation of coal tar reads like romance. Perkins, the English chemist, might discover that Germany alone has learned the art of exploiting. In 1892 the Empire exported 21,879,204 pounds of coal-tar dyes, of which England took 4,146,872 pounds and the United States 5,153,448 pounds. In 1901 51,060,792 pounds were exported—11,830,776 pounds to Great Britain and 10,461,324 pounds to the United States. German price lists put the price of these coal-tar products at 57 cents per pound in 1892 and 37 cents in 1901.

One hundred and twenty companies, working under the limited-liability laws, with a paid-up capital of $83,931,914, paid out $10,323,520 as interest to the stockholders in 1901—a 12.3 per cent dividend. This is a trifle less than the one paid in 1900 and a little more than 1 per cent less than in 1899, when the dividend was 13.52 per cent.

INDIGO.

Nothing in the long list of modern discoveries is more wonderful than Germany's investigations and success in the production of indigo. For a long time it had been the dream of dyers and chemists to find a substitute for India's natural product. They had driven French farmers to desperation when they destroyed the value of madder by substituting an artificial red won from coal tar. They expected to do nearly as much with a substitute for natural indigo. In 1892 the Empire had to import 3,556,740 pounds of natural indigo, valued at $4,450,600; in 1896, 4,026,756 pounds, worth $4,926,600; in 1902, only 1,074,468 pounds, valued at $833,000. India, the Dutch East Indies, and parts of Central America were the great producers. They, too, were watching the work going on in the Empire's laboratories, for they were very much interested. At last, in May, 1897, Bayer, a great chemist at Munich, made the long-looked-for and longed-for discovery. Since then the exports of the German Empire have gone on increasing, while the exports of natural indigo from other countries have been diminishing. In 1897 the exports were 1,036,116 pounds; in 1902, 10,779,972 pounds; expressed in values, $1,142,400 and $5,950,000; or, nearly 500 per cent—and this notwithstanding the fact that the effect of the discovery of artificial indigo was to reduce the prices of this dye. Germany paid for natural indigo an average of $2,737,000 in the years previous to 1896; since that time, less than $238,000; last year, only $166,600, while it exports millions of dollars' worth of the artificial, Great Britain taking 710,124 pounds last year and the United States 1,449,012 pounds. Even the East Indies are down for quite a large quantity in 1902—85,476 pounds. One company, the aniline factory at Ludwigshafen on the Rhine, is reported to be producing more than 1,000,000 marks' worth of artificial indigo every twelve months. Once familiar with the Empire's methods of investigation and experimentation all wonder at results vanishes.

The aniline company at Ludwigshafen has nearly 100 chemists constantly at work experimenting in all kinds of artificial products. If, as in the case of the artificial indigo, a discovery is made by somebody else in another laboratory, the Baden Aniline Company is ready and willing to pay liberally for the rights of production. Nowhere on earth are the essential elements of intelligent practice better joined to theory than in the laboratories of that company. That it pays is proven by the company's enormous growth and dividends.

GERMAN AND FOREIGN FLAGS AT HAMBURG.

(*From United States Consul-General Guenther, Frankfort, Germany.*)

At the port of Hamburg the majority of vessels formerly carried other than German flags, due principally to the great numerical superiority of that of England. The German flag, however, has dominated since 1899, the English flag taking second place. In 1902 the German flag carried 4,660,000 tons (registered) and all other flags 4,100,000 tons.

The "Hamburg" flag alone carried 3,700,000 tons, against 3,100,000 tons under the English flag. The other flags followed in the order here given: Norwegian, 232,000 tons; Danish, 133,000 tons; Dutch, 124,000 tons; Swedish, 101,000 tons; and all other nations (Austria-Hungary, Italy, Spain, etc.), less than 100,000 tons.

Compared with the year 1901 the German, English, Danish, Dutch, French, Italian, Austro-Hungarian, and Greek flags show an increase, especially the two latter; the Norwegian, Russian, and Spanish flags show a decrease. Non-European flags are seldom seen at Hamburg; in 1902 only 1 American ship of 2,147 tons, 1 Brazilian ship of 121 tons, and 1 Argentine ship of 1,068 tons entered the harbor.

The net of regular lines extending from Hamburg across the seas to all the countries on earth shows the colors of the various nations in about the same proportion; 75 regular lines carry the German flag, 38 the English, 6 the Norwegian, 4 the Danish, 3 the Dutch, 2 the Swedish, and 1 each the Russian, Spanish, Belgian, and French.

Of the German lines 13 are between Hamburg and other German ports, as many between Hamburg and Russian ports, 9 between Hamburg and Great Britain, and 32 between Hamburg and non-European countries; 56 lines are owned by Hamburg shippers, of which 6 run exclusively between Hamburg and Great Britain and 26 between Hamburg and non-European ports.

Of the 38 English lines touching Hamburg, 6 connect with America and Africa. The one line which, in 1901, flew the American flag has been discontinued.

In 1902 the regular lines made not less than 7,162 trips (3,873 German), 975 of which were to non-European countries with 2,600,000 registered tons, while the total tonnage of all the trips was 5,700,000 registered tons.

RICHARD GUENTHER,
FRANKFORT, GERMANY, *August 24, 1903.* *Consul-General.*

ELECTRICAL INDUSTRIES OF GERMANY.

(*From United States Deputy Consul-General Hanauer, Frankfort, Germany.*)

The electrical industries of Germany form the subject of a brochure published by Dr. Bürner, the syndic of the Association for Guarding the Interests of German Electrotechnics. This expert says that in the year 1900 about 2,500,000,000 marks ($595,000,000) was invested in that branch of German industry. The severe crisis which it has undergone, and from which it still suffers, is in the main due to the following causes:

1. The electrical companies, instead of confining their activity to manufacturing, engaged in promoting ventures and obtaining concessions, and carried on the building of electric roads, lighting plants, etc., in the towns and rural districts, instead of leaving those enterprises to the municipalities, financial promoters, and private companies.

2. A great mistake was committed in erecting and conducting branch electrical factories in foreign countries, which caused numerous competitors to spring up in those countries and led other German companies to enter the foreign business, thereby producing a sharp struggle to obtain profitable orders.

As a third error, Dr. Bürner names the practice inaugurated by the electrical companies of establishing installation shops in all the cities and large towns of Germany, instead of leaving that part of the business to the resident plumbers and installation concerns.

Dr. Bürner does not favor the plan of uniting the German electrical companies in one common concern. He urges the formation of syndicates to regulate and protect prices and limit production where such is unprofitable. This main recommendation is to extend and increase the export trade. During 1902 Germany exported 13,499 tons (of 2,204.6 pounds each) of electrical machinery, 8,481 tons of electric cable, 2,295 tons of carbon burners, and 2,206 tons of accumulators.

SIMON W. HANAUER,
Deputy Consul-General.

FRANKFORT, GERMANY, *August 25, 1903.*

MEAT AND MEAT PRICES IN GERMANY.

(From United States Consul Albert, Brunswick, Germany.)

WHOLESALE PRICES.

The continued high prices of meat in Brunswick have caused a number of complaints. A few months ago, when there was a decrease in the price of cattle, it was hoped that it would be accompanied by a fall in the price of meat. This did not occur and there seems to be no prospect of the hope being realized. At the end of August the market prices for cattle at the city slaughterhouse, per 110 pounds slaughtered weight, were as follows:

Beef cattle	$15.23	to	$17.66
Fatted calves	18.32	to	21.42
Small sucking calves	14.28	to	16.52
Wethers			17.37
Sheep			16.52
Hogs	13.80	to	14.76

These prices for hogs have prevailed for some time. The lowest price for them during the year was slightly under 50 marks ($11.90) per 110 pounds slaughtered weight. The tendency is for still higher prices for hogs than the highest given.

RETAIL PRICES.

According to the statements of the Brunswick Butchers' Union the retail prices for meat per pound at the end of August were:

	Cents.
Beef	17 to 19
Veal	18 to 19
Mutton	18
Pork	17

It must be remembered that the German pound is one-tenth greater than the American pound.

A comparison of the wholesale price for cattle with the retail price for meat gives little promise for an early reduction in the latter. The "Freibank," or table, at the slaughterhouse—where meat of an inferior quality but not considered injurious to health is exposed for sale at low prices—is more frequented than usual. Nothing is allowed to go to waste here which can be made use of advantageously and without injury.

SIBERIAN MEAT FOR GERMANY.

The German butchers' special organ, the Allgemeine Fleischerzeitung, announces that a company has been formed in Berlin to purchase meat in the vast country opened up by the great Siberian Railroad. For this purpose salted meat will be packed in 4-kilogram (8.8-pound) packages and transported in carloads of 10,000 kilograms (22,046 pounds) and then brought for sale to the great central meat market of Berlin. Only the better cattle will be slaughtered for the company, representatives of which start on the journey to make arrangements in a few days. The expenses for transport duty and other outlays are placed at 3,500 marks ($833) for a carload of 10,000 kilograms (22,046 pounds). The imports are expected to begin in the spring.

TALBOT J. ALBERT, *Consul.*

BRUNSWICK, GERMANY, *September 4, 1903.*

WESTPHALIAN COAL SYNDICATE.

(From United States Consul-General Hughes, Coburg, Germany.)

September 15, 1903, is the date set, so far as I can learn, for the three great German syndicates—coal, coke, and briquettes—to be incorporated into one powerful association, controlling the whole market of the Rhenish-Westphalian basin. The statutes are not yet determined, but it is proposed that the adherents shall be bound till December 31, 1915, provided that dissident companies, including those producing at least 120,000 tons a year, join before December

31, 1904; otherwise the group shall be dissolved on December 31, 1905. Should dissidents rally to the movement before September 15 of this year, the new convention will have force from September 30, 1903. The exploitation in this region has nearly trebled since 1895, the increase being from 4,000,000 tons to more than 11,000,000 tons. The more important companies are the Deutscher Kaiser, with 1,576,000 tons; the Gutehoffnungshütte, with 1,575,000 tons; the Krupp, with 1,514,000 tons; Bochum, 1,109,000 tons; Schalke, 898,000 tons; the Rhine Steel Works, 810,000 tons; and Differdange, 742,000 tons.

OLIVER J. D. HUGHES,
COBURG, GERMANY, *August 28, 1903.* *Consul-General.*

SCIENTIFIC POTATO CULTIVATION IN GERMANY.

(*From United States Consul-General Mason, Berlin, Germany.*)

In a recent report, "The potato as a source of wealth in Germany" (ADVANCE SHEETS No. 1599, March 20, 1903), the statement was made that potato cultivation in this country has been advanced by systematic and careful experiment to a high standard of efficiency. In response to the expressed desire of certain American agriculturists for some account of the methods employed here for securing maximum yield and high quality of product, the following report is respectfully submitted:

Potato cultivation, like all farming on a large scale in Germany, is based on an exact knowledge of the soil. This includes not only the elements which it contains, but its underlying strata, exposure, elevation, and surroundings, whether shaded by adjacent woodlands or buildings, and especially its susceptibility to natural efficient drainage. There is no careless, hit-or-miss guesswork as to what the soil may lack or what it contains. The agricultural and technical schools of Germany have trained an army of practical chemists, expert in the analysis of soils and familiar with the elemental requirements of every plant known to German husbandry. The effective value of every kind of fertilizer, its influence on crops planted in sand, clay, or loam, and the efficacy of clover, lucern, and other growths when plowed in to enrich soils in nitrogen are accurately known. The Ministry of Agriculture, through its system of experimental stations, has worked out the whole problem of varieties, soils, methods of planting, cultivation, and harvesting; the farmer has only to follow the methods that modern science has made easy and plain, and with reasonably favorable sunshine and rainfall his result is secure.

THE INFLUENCE OF VARIOUS SOILS.

Although the potato will grow in every arable field in Germany, from the upper hill slopes to the moorlands of the valleys and seacoast, there is a wide variation, both as to quantity and quality, in the product of the different localities. Poor, light, gravelly soils yield small and few potatoes, and in dry seasons fail altogether. Heavy, tough, cold clays are likewise unfavorable. The ideal potato land is a warm, permeable, loamy sand or a light moorland, well drained, clean, and rich from the vegetable decay of past ages. Soils containing large proportions of sand produce potatoes of the best flavor and with highest percentage of starch. So marked are these characteristic effects that in every potato market of Germany the product of certain communes are known and rated at the head of the list, because the soils of those districts have demonstrated their superior fitness for potato culture. A potato field should be open, fully exposed to sun and wind, not shaded or obstructed by trees, and above all free from clay substrata which hold water and make a wet subsoil. Crops grown on land with these defects may in some seasons be large, but they rot easily and are always deficient in starch and of inferior flavor. In Germany the red and so-called "blue-skinned" potatoes are found to do better than the white in damp locations or where the land is excluded from free action ot sun and wind.

PREPARATION OF THE SOIL.

In the preparation of land for potato planting the first requisite is deep, thorough plowing. In view of the many centuries during which the fields of Germany have been cultivated, and the generally high standard of intelligence among farmers here, an American is surprised to note that in many wheat, rye, and oat fields the plow does not cut more than 6 or 7 inches in depth. But for potatoes this superficial scratching of the earth will not suffice. Every additional inch of depth broken up adds a tangible percentage to the yield, and on the best farms subsoil plowing attains a depth of 12 to 15 inches. Small tracts are worked with the spade, and instances are given where the potato crop has been doubled by working the soil two spade lengths in depth. This deep, careful preparation of the land is always completed in autumn, and the upturned earth left exposed to the action of frost and thawing during the winter. Careful experiment has shown that a given piece of land prepared in autumn yields one-third more potatoes than if treated in precisely the same manner in spring immediately before planting time. Having been deeply plowed and thoroughly harrowed in autumn, the frost penetrates readily, the action of the air upon the various elements of the soil is enhanced, it dries out quickly in spring, and with the first warm days is ready for planting.

PLANTING.

It is then plowed again, usually to a depth of 5 or 6 inches, with a broad, shallow plow drawn by one horse, and in every third furrow the potatoes are dropped and are covered by the furrow slice next turned in. This quick, easy method of planting with the plow is practicable only in light, loose soils that have been thoroughly prepared.

In heavy clay soils holes 5 or 6 inches deep are made in rows with the hoe or spade, the potatoes dropped therein and covered with the hoe. Still another method of planting is to mark out the land in squares by crosshatching with a "Reihenzieher," or marking plow, which draws three shallow lines or furrows. A potato being planted at each intersection of these lines and covered with the hoe grows in separate plants or "hills" which can be worked both ways with the small plow or cultivator, though the usual method in Germany is to plant potatoes in rows which are in line and can be worked by horse implements in only one direction. In the light, sandy soils of Germany it is found advantageous to press down the earth over the seed potato with the foot or otherwise, to prevent too rapid drying out of the soil under the spring sunshine. Whatever method of planting is employed, great care is taken that all the seed potatoes shall be covered to a uniform depth. Experiment has shown that an inch or two more or less of superincumbent soil will make an important difference in the character of the plant and its product. When planted too deep the plant grows in long, slender stems which remain green too late in autumn and produce only a few small tubers. The proper depth is a matter of judgment for the experienced farmer and varies from 10 centimeters (4 inches) in light, sandy soils to 3 inches for loam and 2 inches for heavy clay or moorlands. For the same reasons, care and judgment are required in cultivating or "hilling up" the plants to bank them up with sufficient earth to preserve the moisture at the roots, but not to smother the plant by putting too much of its length of stems underground. Early varieties, which reach their maturity the end of summer, are planted more closely together than the later sorts, which form the bulk of the potato crop and are harvested in October and November. While it is therefore difficult to formulate an exact rule that will fit the different varieties of potatoes and varying soils, the general principle is that in potato culture on a large scale one potato plant, or "hill," is allowed 4 square feet of space. If the rows are to be cultivated by horse implements in both directions they are set 2 feet apart. If, as is more usual, they are to be worked in one direction the seed potatoes are laid 12 or 15 inches from each other in rows 3 feet apart. In light soils this interval may be reduced to 2 feet, and for very early varieties to even less.

THE QUANTITY OF SEED TO BE PLANTED.

The quantity of seed to be planted depends upon the size of the potatoes planted, the variety, whether early or late, and somewhat also upon the strength and depth of the soil. The Prussian "morgen," or unit of land measure, is one-fourth of a hectare, which latter is equivalent to 2.471 acres. The average allowance of seed potatoes, subject to variations in deference to the above conditions, is 2,000 kilograms (4,408 pounds avoirdupois) per hectare, or about 1,780 pounds per acre. Experiments have been made at the agricultural testing stations with all quantities of seed, from 1,800 to 2,500 kilograms (3,967 to 5,510 pounds) per hectare, with the general result of somewhat increasing the seed allowance, so that on many highly cultivated and progressive farms the proportion is as high as 2,200 kilograms per hectare, or 1,960 pounds per acre. Whatever the quantity planted and at whatever intervals the rows or hills may be placed, the German farmer who knows his business plants only large, full-grown, healthy potatoes. Every attempt to economize in seed by using small, inferior, and therefore unmarketable potatoes has resulted in the further deterioration of the crop, and, if continued, in disaster to the farmer. Here, too, the long-continued, careful tests of the agricultural experiment stations have produced some surprising proofs of the value of large, perfect potatoes for seed purposes. Not that the very largest are, however, necessary. On well-managed farms in Prussia potatoes when harvested are frequently assorted into four grades or sizes, viz, (1) very large, (2) full-sized and perfect in form and condition, (3) medium, and (4) small. Under this division grade 1 brings the highest price in the market, grade 2 is used for seed and is also salable for food, while grades 3 and 4 go mainly to the distilleries, the starch and dextrin factories, or in seasons of great abundance are fed to hogs and cattle. Seed potatoes are usually planted whole—not cut, as is often done in the United States and other countries. The verdict of scientific experiment is that cutting the seed potato impairs the vigor of the plant, which in its earliest stage of growth feeds upon the substance of the tuber, but all accounts agree that large potatoes cut into sections are much better than small ones planted whole. Before planting, the seed potatoes are taken out of the cellars or buried heap where they have been kept through the winter and thoroughly dried in a cool, airy place. If planted with the damp of winter still on them the danger of rot in the growing tubers is greatly increased. Experiments conducted by Professor Marek at Königsberg show that the richer the seed potato is in starch the more proper nutriment it affords to the infant plant and the larger will be the resulting yield. Another point of prime importance is the change of varieties of seed.

Of all agricultural crops, the potato is one of the most amenable to the principle evolved by Darwin—that plants, animals, and even men, when reproduced under the same conditions from generation to generation, lose something of their original vigor and fecundity. The unfavorable results of "inbreeding" in families and races of animals are entailed in the degeneration of potatoes which are grown year after year from seed raised in the same location. The scientific German farmer rarely plants seed potatoes from his own fields, but exchanges with his neighbor or obtains new varieties from the experiment station or a more or less remote district. The more radically different the conditions of the new locality are from those in which the seed potato was grown the greater seem to be the benefits wrought by the change. Potatoes grown on high hill slopes are brought down and planted in valleys; the product of heavy, wet land is planted in light, dry soils; the growth of sandy fields is the best seed for loam or moorland; and vice versa. Potatoes brought from Scotland have produced some of the largest and best crops ever grown in Germany.

PROCESS OF CULTIVATION.

The process of cultivation begins about three weeks after planting and just as sprouts begin to appear above the surface. The field is then worked carefully with a light harrow or cultivator, which opens up and mellows the soil and destroys the weeds and grass which have begun to appear. At the same time a top dressing of Chile saltpeter (100 pounds to the acre) is added, the fertilizing material being strewn along the rows close to the growing plants. It has been found that nitrogen applied directly at that stage of growth has an immediate and important effect upon the spread and vigor of the roots. The first hoeing takes place about five weeks after planting and when the plants are so far above ground that the rows can be readily recognized. Besides the common hoe, German farmers use a three-pronged fork with wide tines and with a handle like a hoe. This being driven into the ground near the roots of the plant, the laborer is enabled by a prying movement to so lift and loosen the soil that the air is admitted. The second hoeing takes place two weeks later, at which time the mound, or "hill," around the plant is formed, and a fortnight later still the final "hilling up" is done with small plow, horse hoe, and by hand. If the potatoes have been planted at proper depth it is not necessary but rather disadvantageous to build the hill too high. Much depends, of course, on the nature of the soil, something on the variety of the potato itself, but still more on the weather. In a wet season the hills should be proportionately higher than when the ground is dry. It remains to consider finally the question of—

FERTILIZERS AND THE PREPARATION OF POTATO LAND.

This, from the standpoint of German agriculture, is by far the most complicated and important portion of the subject. The three essential elements to be provided by artificial fertilization are phosphoric acid, potash, and nitrogen. The first is obtained through the application of mineral phosphate, Thomas slag phosphate meal, or bone dust. Thomas meal is applied in the proportion from 1,000 to 1,200 pounds per acre, but being sparingly soluble it acts very slowly on the growing crop and in dry seasons hardly at all. It is most effective in moist soils and in seasons of abundant rainfall. Steamed bone dust is used—300 to 400 pounds per acre—by being strewn over the land in late autumn and plowed in. Superphosphate fertilizers are used in the spring and are deposited and covered with the seed at planting time. Far more important, however, for potato culture are the potash-bearing fertilizers. These are plentiful and cheap in Germany in the form of kainite and carnallite minerals from the mines of the Stassfurt district, near Magdeburg. The enormous development of potato production in this country during the past thirty years has been due to no other fact so potent as the exclusive possession of an unlimited supply of potash minerals. Many of what are now the best potato lands were twenty years ago deficient in potash for the reason that the potato consumes that element in large proportion, so that the original natural supply had long been exhausted by ignorant, unskillful cultivation. What was needed was to restore the exhausted potash. But it was found that neither kainite nor carnallite—both of which contain traces of chlorine—could be used raw and directly as a manure for the growing crop without impairing the flavor and quality of the potato. To produce the best effect these mineral fertilizers have to be digested and assimilated with other elements in the soil. To secure this result they are applied during the preparatory process, one or two years before the land is planted to potatoes, and serve to nourish the clover, the lupine, or other fallow crops that are grown and plowed under as manure. By this method the potash salts are not only digested, purified from chlorine, and mingled thoroughly with the soil, but it is enriched by the nitrogen of the buried vegetation and prepared for the abundant growth of potatoes of the highest quality, rich in starch and of standard flavor.

Nitrogen is applied in the form of stable manure worked into the soil during the one or two years previous to potato planting and of Chile saltpeter, which, as already described, is used as a top dressing applied directly while the plants are growing. Chile saltpeter covered in the earth either leaches away into the subsoil or forms insoluble combinations with other elements and is thereby lost to the farmer. Used as a top dressing it has an immediate and often important effect in reviving and stimulating a crop, but it should never be applied to the soil in autumn nor in the spring before the potato sprouts have appeared above ground.

Reduced to its simplest terms, the secret of German preeminence in potato cultivation consists in the careful, patient scientific preparation of the soil, not only by the restoration of its exhausted elements, but by mellowing, enriching, and revivifying it by deep cultivation and the plowing in of green manure crops, which have taken up and digested the crude mineral fertilizers. Land thus prepared will yield three or even four crops of potatoes before their quantity or quality will begin to deteriorate. In extreme cases, where a small farmer can not advantageously raise any other crop, he may continue to plant potatoes on the same ground ten or twelve years, but good husbandry dictates that as a principle a change to cereals, beets, or clover is advisable after the fourth successive season of potatoes.

THE QUESTION OF VARIETIES.

The question of varieties is also of importance, but the subject is so diffuse that any adequate consideration of it would far transcend the limits of a consular report. The prospectus* of a standard dealer in seed potatoes, which is transmitted as an exhibit with this report, includes 100 different varieties of potatoes, all meritorious and more or less specially adapted to each peculiar condition of soil, exposure, or purpose for which the product is to be used. Certain varieties excel for food purposes, others as material for starch and dextrin, still others for desiccation and distillation in the production of alcohol, and yet others for stock-feeding purposes. Many of the most valuable sorts for general purposes are of recent origin. There are dozens of skillful and experienced growers in Germany who give their whole time and energy to the propagation of improved varieties of potatoes, and samples of their products weighed, analyzed, and labeled with the place and all conditions of growth formed a large and interesting feature of the exhibition last February. As long ago as 1863 not less than 500 varieties of potatoes were catalogued and known in this country. Many of them have disappeared from the catalogues of to-day, and the real crop of practical growers is limited to not more than 20 standard sorts which have best stood the tests of varying seasons, diverse soils, and the multiform uses to which the potato is now applied in Germany.

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*On file in the Bureau of Statistics, Department of Commerce and Labor.

FRANK H. MASON,
BERLIN, GERMANY, *August 25, 1903.* *Consul-General.*

POTATOES IN GERMANY.

(*From United States Consul Warner, Leipzig, Germany.*)

In order to better comprehend that which is to follow, it would perhaps be wise to recall a few facts regarding the relative sizes of Germany and the United States before taking up the subject of this paper.

On the 1st of December, 1900, Germany, exclusive of her colonial possessions, had a population of 56,367,178 and an area of 208,780.72 square miles.[*] In June, 1895, there were 9,468,821 persons, including 346,899 women laborers, engaged in agriculture and cattle rearing over an area of 125,549.74 square miles.[†]

On June 1, 1900, the United States, exclusive of her insular possessions and Alaska, had a population of 76,215,312 and an area of 3,025,600 square miles.[‡] There were 10,381,765 persons, including 663,209 women laborers, engaged in agricultural pursuits over an area of 646,091.39 square miles.[§]

PRODUCTION AND CONSUMPTION IN GERMANY AND UNITED STATES.

The following table shows the area devoted to the cultivation of potatoes in Germany, the total production thereof, and the average annual yield per acre for the years 1899, 1900, 1901, and 1902, respectively:

Year.	Area under cultivation.	Production.	Average yield per acre.
	Acres.	*Bushels.*	*Bushels.*
1899	7,737,845.07	1,411,160,740	182.37
1900	7,953,597.97	1,488,128,290	187.11
1901	8,200,833.87	1,785,199,570	217.68
1902	8,907,465.77	1,593,621,076.66	199.01

NOTE.—See Statistisches Jahrbuch für das Deutsche Reich, 1903, pp. 34 and 35, respectively.

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[*] See Statistisches Jahrbuch für das Deutsche Reich, 1903, p. 1.

[†] See *ibid*, pp. 18 and 29, respectively.

[‡] See Twelfth Census of the United States of America, 1900, Vol. I, pages xviii and xxxii, respectively.

[§] See *ibid*, Vol. V, pages xviii and lxxii, respectively.

The potato cultivation in the United States during the years 1899, 1900, 1901, and 1902, respectively, was:

Year.	Area under cultivation.	Production.	Average yield per acre.
	Acres.	*Bushels.*	*Bushels.*
1899	2,581,353	228,783,232	88.6
1900	2,611,054	210,926,897	80.8
1901	2,864,335	187,598,087	65.5
1902	2,965,587	284,632,787	96

NOTE.—See Yearbook of the Department of Agriculture, 1900, p. 797.

From the above, it is determined that the annual per capita production of potatoes in Germany and the United States was as follows:

Production per capita.

Country.	1899.	1900.	1901.	1902.
	Bushels.	*Bushels.*	*Bushels.*	*Bushels.*
Germany	24.03	26.4	31.67	28.27
United States	3	2.76	2.46	3.73

NOTE.—These figures can not be said to be accurate, because they have been obtained by assuming that the population of Germany was 56,367,178 and the same in the years 1899, 1900, 1901, and 1902, and that of the United States 76,215,312 and the same in the years 1899 and 1900, which were not the facts.

In order to ascertain the quantities of potatoes consumed in these two above-mentioned countries, the foreign trade thereof must also be taken into account. The following table shows the quantity, value, and price per bushel of the exports and imports of potatoes of Germany and the United States for the years 1899, 1900, 1901, and 1902, respectively:

Country.	Exports.			Imports.		
	Quantity.	Value.	Price per bushel.	Quantity.	Value.	Price per bushel.
1899.	*Bushels.*		*Cents.*	*Bushels.*		*Cents.*
Germany*	6,320,086.66	$1,722,882	27	7,851,763.33	$2,484,006	32
United States	†579,833	450,739	78	‡530,420	294,391	56
1900.						
Germany*	6,629,883.33	1,721,454	26	6,515,043.33	1,909,474	29
United States	§809,472	626,791	77	‖155,861	147,349	90
1901.						
Germany*	8,228,403.33	1,735,734	21	5,161,310	1,343,986	26
United States	§741,483	518,221	70	‖371,911	224,759	60
1902.						
Germany*	7,234,003.33	2,253,860	31	5,822,666.66	1,770,244	34
United States	§628,484	564,550	90	‖7,656,162	3,160,801	41

* See Statistisches Jahrbuch für das Deutsche Reich, p. 134.
† See Monthly Summary of Commerce and Finance of the United States, June, 1901, p. 3165.
‡ See *ibid*, June, 1901, p. 3136. § See *ibid*, June, 1902, p. 4569. ‖ See *ibid*, June, 1902, p. 4538.

Country.	Excess of exports over imports.		Excess of imports over exports.	
	Quantity.	Value.	Quantity.	Value.
1899.	*Bushels.*		*Bushels.*	
Germany*	....	....	1,531,676.67	$761,124
United States	49,413	$156,348	....	....
1900.				
Germany*	114,840	....	....	188,020
United States	653,611	479,442	....	....
1901.				
Germany*	3,067,093.33	391,748	....	....
United States	369,572	293,462	....	....
1902.				
Germany*	1,411,336.67	483,616	....	....
United States	....	....	7,027,678	2,596,251

* See Statistisches Jahrbuch für das Deutsche Reich, p. 134.

By substracting the excess of exports in the one case, or adding the excess of imports in the other, from or to the total production, the internal consumption of a product will be obtained. Bearing this in mind the following table shows the respective annual internal consumption of potatoes in Germany and the United States for the years 1899–1902:

Total consumption in Germany and the United States.

Year.	Germany.		United States.	
	Total.	Per capita.	Total.	Per capita.
	Bushels.	*Bushels.*	*Bushels.*	*Bushels.*
1899	1,412,692,416.67	25.06	228,733,819	3
1900	1,488,013,450	26.4	210,273,286	2.76
1901	1,782,132,476.67	31.62	187,598,087	2.46
1902	1,592,209,739.99	28.23	284,632,787	3.73

NOTE.—These figures can not be said to be accurate, because they have been obtained by assuming that the population of Germany was 56,367,178 and the same in the years 1899, 1900, 1901, and 1902, and that of the United States 76,215,312 and the same in the years 1899 and 1900, which were not the facts.

There would appear to be two principal ways in which potatoes are consumed, namely, as food for persons and animals and for distilling and manufacturing purposes. (The writer has heard it said that potatoes, after they have become more or less dried up and hard, have not infrequently been used as fuel.)

The figures are lacking which relate to the ways in which potatoes were consumed in the United States during the years 1899–1902, both inclusive. Based upon the information contained on page 35 of Volume VII of the Twelfth Census of the United States, 1900, and page 797 of the Yearbook of the Department of Agriculture, 1900, however, one might perhaps be justified in estimating that in the United States in the year 1900 not more than 7,946,366.59 bushels of potatoes were used for manufacturing purposes; so that the quantity consumed as food in that year was about 202,326,919.41 bushels, or 2.65 bushels per capita.

Let us now attempt to gain an insight into the ways potatoes have been consumed in Germany during the past four years. Here, also, we shall have difficulty because of the somewhat meager statistics at hand. In Germany, strange as it may seem to foreigners, it may be said that almost seven-eighths of the alcohol produced is obtained from potatoes.* On many of the large farms one finds potato distilleries. These are under the careful control of the Government. They afford the farmers a very profitable side occupation. The manufacture of starch, glucose, etc., should also be mentioned as a factor in the potato consumption of Germany.

The following table shows the number of potato distilleries, the quantity of potatoes consumed, and the quantity of alcohol produced therefrom in Germany:†

Year ended September 30—	Distilleries.	Quantity consumed.	Alcohol produced.
	Number.	*Bushels.*	*Gallons.*
1899	5,571	94,820,000	82,070,592.08
1900	6,332	91,740,000	77,877,078.25
1901	5,853	102,300,000	87,249,539.26
1902	6,537	113,266,666.66	92,965,940.31

Below an attempt is made to estimate the number of establishments making starch, glucose, etc., the quantity of potatoes used therein, and the amount of starchy materials produced in the years 1899–1902:‡

Year ended September 30—	Factories.	Quantity consumed.	Materials produced.
	Number.	*Bushels.*	*Tons.*
1899	578	33,333,333.33	250,000
1900	590	40,300,000	274,750
1901	595	44,000,000	300,000
1902	627	51,000,000	349,000

By deducting the quantities of potatoes consumed each year in the distilleries and factories from the total consumption, the amount used as food for persons and animals will be obtained.

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* See Statistisches Jahrbuch für das Deutsche Reich, p. 55.

† See *ibid*, pp. 54 and 55.

‡ See pamphlet for 1902 of the Verein der Spiritus Fabrikanten in Deutschland.

The following table shows the quantity of potatoes consumed as food in Germany during the years 1899–1902, both inclusive, respectively:

Year ended September 30—	Consumption.	
	Total.	Per capita.
	Bushels.	*Bushels.*
1899	1,284,539,083.34	22.79
1900	1,355,973,450	24.06
1901	1,635,832,476.67	29.02
1902	1,427,943,073.33	25.35

NOTE.—From this amount a certain small per cent should be deducted for seed potatoes. The writer has no way of estimating just what this should be.

By reckoning 60 pounds of potatoes to the bushel, as has been done throughout this report, it will be seen that the consumption per capita was:

	Pounds.
1899	1,367.4
1900	1,443.6
1901	1,741.2
1902	1,521

Of the total quantity of potatoes consumed as food it might perhaps be roughly estimated that about 50 per cent is really consumed by human beings. The rest is spent in cleaning, paring and cooking, wasted, disappears in shrinkage (due to a loss of water by evaporation), and fed to animals, principally to swine, fowls, and dogs.

The following table shows the estimated actual consumption of potatoes as human food in Germany during the last four years:*

Year ended September 30—	Consumption.		
	Total.	Per capita.	
	Bushels.	*Bushels.*	*Pounds.*
1899	642,269,541.67	11.395	683.7
1900	677,986,725	12.03	721.8
1901	817,916,238.335	14.51	870.6
1902	713,971,536.666	12.675	760.5

These figures, in spite of the reductions, are simply enormous.

Before venturing to make any general remarks in conclusion, a word or two should be said about prices. This may perhaps be just as well accomplished by means of the following table, which, in addition to showing facts hereinbefore mentioned, gives the market value per bushel of potatoes used for manufacturing purposes in distilleries and starch factories and as food, the total value of the crops, and the value thereof per acre in Germany during the last four years:*

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*The writer is familiar with Dr. C. F. Langworthy's article on "The value of potatoes as food," which is to be found on p. 336 of the Yearbook of the Department of Agriculture, 1900.

Year.	Area.	Consumption.			Market price per bushel.	
		For manufacturing purposes.	As food.	Total.	For manufacturing purposes.	As food.
	Acres.	*Bushels.*	*Bushels.*	*Bushels.*	*Cents.*	*Cents.*
1899	7,738,845.07	128,153,333.33	1,284,539,083.34	1,412,692,416.67	17.59	23.56
1900	7,953,597.97	132,040,000	1,355,973,450	1,488,013,450	19.80	26.96
1901	8,200,833.87	146,300,000	1,635,832,476.67	1,782,132,476.67	14.67	22.7
1902	8,007,465.77	164,266,666.66	1,427,943,073.33	1,592,209,739.99	12.62	20.9

Year.	Value.			Market value of yield per acre.
	For manufacturing purposes.	As food.	Total.	
1899	$22,542,171.33	$302,637,408.03	$325,179,579.36	$41.98
1900	26,143,920.00	365,704,039.47	391,447,995.47	49.25
1901	21,462,210.00	371,824,721.95	393,286,931.95	47.98
1902	20,894,720.00	298,440,102.33	319,334,822.33	39.92

NOTE.—In calculating the yield per acre in dollars, the value of the total production— not the total consumption—has been divided by the number of the acres under cultivation.

As for the United States, the following table shows the acreage, the total consumption in bushels, the farm value per bushel in cents, the total farm value in dollars, and the yield per acre in dollars on the 1st of December in the years 1899–1902:†

Year.	Area.	Consumption.	Farm values, December 1.		
			Per bushel.	Total.	Yield per acre.
	Acres.	*Bushels.*	*Cents.*		
1899	2,581,353	228,733,819	39	$89,206,189.41	$34.55
1900	2,611,054	210,273,286	43.1	90,627,786.27	34.82
1901	2,864,335	187,598,087	76.7	143,979,470.00	50.27
1902	2,965,587	284,632,787	47.1	134,111,436.00	45.22

These various tables above given have been prepared in order to show at a glance something about the production of potatoes in Germany and the United States. The methods employed in raising such vegetables in these two countries are each typical of a system of farming—in Germany of the intensive and in the United States of the extensive.

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* See Statistisches Jahrbuch für das Deutsche Reich, p. 188.
† See Yearbook of the Department of Agriculture, 1900, p. 797.

It would seem as if there were, if not an overproduction, at least an excessive consumption of potatoes in the former, while in the latter the conditions are exactly the opposite—*i. e.*, there are not enough potatoes produced to even supply the demand.

In many rural sections of Germany large numbers of the population live chiefly upon potatoes[*] and coffee.

The Agrarians—indeed nearly all of those who are interested in agriculture in this country—are much concerned about the rapid increase in the potato production. How to dispose of the surplus of the potato crops is the serious question. Some supposed that were the Government to foster the exportation of alcohol—viz, spirits, liquors, etc.—by means of premiums, drawbacks, etc., the excess of potatoes would be consumed in the distilleries, but upon investigation it was found that this was almost impossible, as at present not 8 per cent of the production of potatoes is used in this way. Efforts are being made to find some way of utilizing potatoes as feed for cattle. With this in view, money prizes are being offered as a compensation (reward) to the one who will discover some such process. It is feared, however, that were such a means found it would not be practical, because it would make cattle feed too expensive, potatoes containing such a high percentage of water.[†]

It is reported that a German has made the discovery that by means of a chemical preparation being poured over potatoes they may be kept in a condition of preservation for years.[‡] If this is true it will be of the utmost importance to all countries, as it will enable them to keep a large stock of potatoes on hand as food for their respective armies, thus better preparing them for some unforeseen war.

All the more strange is it that the United States should produce such a comparatively small quantity of potatoes—even less than the British Isles[§]—when one considers that not only is the cultivation of potatoes, as well as other vegetables, one of the best-known ways of preparing land for the raising of breadstuffs, but because it is very much more profitable to raise potatoes than any kind of grain.[‖]

Under similar circumstances, as a matter of fact, an acre planted with potatoes will yield more than ten, fourteen, or seventeen times as much food material as will one upon which wheat, rye, or peas, respectively, is grown.[¶]

It may be said, generally speaking, that it is the opinion of scientific German agriculturalists that about half of the land under cultivation should be devoted to the growing of vegetable products, principally potatoes and sugar beets, and the other half to grains, mostly wheat, rye, barley, and corn.*

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[*] See Yearbook of the Department of Agriculture, 1900, p. 340.

[†] See Jahrbücher für Nationalökonomie und Statistik, Jena, 1903, article by Professor Pierstorff.

[‡] This is being investigated and will be made the subject of a subsequent report.

[§] See Statesman's Yearbook, 1903, p. 72.

[‖] See Roscher's Grundlagen der Nationalökonomie, 1900, p. 472.

[¶] See Engel's Jahrbuch für Sachsen, Vol. I, p. 419.

Potatoes should be raised as near as possible to the places where they will be consumed—perhaps we had better say marketed. Those which, in order to be marketed, must undergo a long wagon or railroad haul will yield less return to their respective owners than those which are grown at the very doors of the markets. This difference in price will be the difference in the freight rate between the two places.† Perhaps the best soil for raising potatoes is that which is light and somewhat sandy and in which there is, of course, some little moisture.‡

Doubtless many American farmers and gardeners are familiar with these last given facts. Why, then, do they not put them to some practical use? As soon as they become impressed with the necessity of cultivating the soil in a systematic and scientific way; as soon as they appreciate the profitableness of the intensive system of farming, the better it will be for them and for those classes of citizens so dependent upon them. Good, pure food and plenty of it, cheap enough to be within the reach of all, is the strongest foundation for the building of healthy, hardy, and happy constitutions.

B. H. WARNER, Jr., *Consul.*

LEIPZIG, GERMANY, *August 1, 1903.*

POTATOES.

(Prepared in the Bureau of Statistics, Department of Commerce and Labor.)

As will be seen in the foregoing tables, the production of potatoes in the United States during 1902 reached 284,632,787 bushels and exceeded the yield in any preceding year excepting 1895. The acreage was the highest ever recorded, and the average yield of 96 bushels per acre was the highest in twenty years, with the exception of the yield of 100 bushels per acre for the year 1895.

The United States usually raises just about enough potatoes for home consumption. The exports and imports, averaging a little more than a half million bushels each way, offset each other and probably represent largely the ordinary interchange between this country and Canada. The twelve months ended June 30, 1902, was an exception, due to a shortage in the United States crop of

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* See Handwörterbuch der Staatswissenschaften, II Auflage, Vol. I, p. 46.

† The State of New York produces about 15 per cent of the potatoes raised in the United States. See Twelfth Census of the United States, 1900, Vol. VI, p. 283.

‡ See Handwörterbuch der Staatswissenschaften, II Auflage, Vol. I, p. 46; the Yearbook of the Department of Agriculture, 1900, p. 346; and Schönberg's Handbuch der Politischen Oekonomie, IV Auflage, Tübingen, 1896, p. 79.

1901. The imports for that period reached 7,656,162 bushels, worth $3,160,801. The total crop for 1901 was 187,598,087 bushels, a decrease from 1900 of 23,328,810 bushels; while the potato crop in Germany was 1,788,950,112 bushels for 1901, an increase of 297,695,400 bushels over 1900.

Imports of potatoes into the United States.

Country.	1893.	1895.	1897.	1899.	1901.	1902.	1903.
	Bushels.	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*
Belgium	301,285	1,385	....	2,792	....	2,587,362	50,906
France	2,368	974	319	493	214	16,178	1,663
Germany	114,318	25,558	15,814	30,488	30,414	407,177	40,019
Netherlands	149,865	1,011	317	434	404	176,881	2,272
United Kingdom	2,711,488	255,153	62,839	221,566	54	3,432,883	4,334
Bermuda	74,638	70,073	56,734	78,115	85,566	90,806	111,344
Dominion of Canada	931,181	975,840	99,982	192,724	242,282	885,198	105,200
Cuba	29,065	7,966	8,080	1,406	11,515	13,080	11,350
Total	4,314,208	1,337,960	244,085	528,018	370,449	7,609,465	327,088
All other countries	2,813	3,573	2,093	2,402	1,462	46,697	31,417
Total imports	4,317,021	1,341,533	246,178	530,420	371,911	7,656,162	358,505
Total value	$2,066,589	$603,554	$145,584	$294,391	$224,759	$3,160,801	$238,445

Exports of potatoes from the United States.

Country.	1893.	1895.	1897.	1899.	1901.	1902.	1903.
	Bushels.	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*
Bermuda	2,996	5,301	4,959	5,921	8,568	9,507	18,946
Dominion of Canada	27,705	58,612	85,534	41,546	67,135	29,285	335,798
Guatemala	19,620	31,557	35,236	23,959	22,486	16,025	12,197
Nicaragua	1,994	4,744	5,180	5,449	7,607	6,343	4,121
Mexico	29,339	33,902	59,656	54,895	70,744	97,838	72,058
British West Indies	11,475	11,296	34,562	15,471	14,833	9,423	13,654
Cuba	666,648	355,526	580,923	348,331	281,293	290,422	283,689
Colombia	10,566	9,655	20,105	5,324	12,011	8,206	14,904
Venezuela	25,107	12,714	21,595	8,518	5,683	5,452	2,075
Hongkong	6,075	3,376	6,083	5,447	10,771	7,792	4,397
Hawaii	15,109	8,273	16,745	21,913	....	....	....
Philippines	....	....	....	....	208,777	23,183	43,758
Total	816,634	534,956	870,578	536,774	709,908	503,476	805,597
All other countries	29,086	38,001	56,068	43,059	31,575	25,008	37,478
Total imports	845,720	572,957	926,646	579,833	741,483	528,484	843,075
Total value	$700,032	$418,221	$515,067	$450,739	$518,621	$564,550	$552,533

It will be seen from the above tables that Bermuda, Canada, and Cuba are the only countries from which we import potatoes and to which we export the same in any considerable quantities. During the seven years above reported the United States imported 14,821,730 bushels, at a cost of $6,734,083, the average price paid being 45.4 cents per bushel. On account of the short crop of 1901, which was 23,328,810 bushels short of the crop of 1900 and

97,034,698 bushels short of the crop of 1902, our imports for 1902 amounted to more than half of the total imports for the seven years. Exports for the same period amounted to 5,038,198 bushels, valued at $3,719,763, an average of 73.8 cents per bushel. Thus it will be seen that the number of bushels imported during the year 1902 was over two and one-half millions more than the total number of bushels exported during the seven years, while the value of the total exports was only a half million more than the cost of the imports for 1902.

While the average price per bushel for the total imports was 45.4 cents, the average price paid for Bermuda potatoes was $1.63 per bushel, and the average price per bushel received for exports to Bermuda was 92 cents.

Area and yield of potatoes in other foreign countries.

Country.	Year.	Area.	Quantity produced.	Yield per acre.
		Acres.	*Bushels.*	*Bushels.*
Austria-Hungary	1900	4,306,240	608,456,692	141
Canada	1902	202,274	20,558,213	101
Great Britain	1902	573,880	119,249,666	207
France	1900	3,729,448	450,134,785	127
Russia	1901	9,273,719	851,969,280	92

DESTRUCTION OF CORK FORESTS OF ITALY.

(*From United States Consul-General Guenther, Frankfort, Germany.*)

The cork industry, which is quite an important one, will receive a fresh impetus, a new process having been discovered by which large pieces can be made out of small ones, so that cork waste can be utilized in large quantities. This is all the more important as the price of cork increases steadily, both on account of the growing demand and the lessened supply of the raw material.

Formerly, Italy was a large producer of cork, but a great part of the splendid cork-oak forests has already been destroyed. In some Provinces—as, for instance, in Calabria—the trees have been felled and used for charcoal making; in other Provinces they have been cut down on account of their high potash contents.

Larger forests of cork-oak trees are still existing in Spain, Portugal, France, Algeria, and Tunis. None are found in Asia Minor and only rarely in Greece and European Turkey, although the climates seem to be favorable for their growth. The area covered by these forests is estimated at 300,0000 hectares (741,300 acres) in Portugal, 250,000 hectares (617,750 acres) in Spain, 280,000 hectares

(691,880 acres) in Algeria, and only 80,000 hectares (197,750 acres) remain in Italy.

While Spain still furnishes 32,800 tons of cork annually, the production of Italy has decreased to 4,000 tons. The value of the Spanish exports of cork amounts to $6,000,000 per year, against less than $250,000 for Italy. Only Sicily and Sardinia are still producing cork to any considerable extent in Italy, while the former great oak forests of Calabria are almost totally destroyed. It seems incomprehensible that this destruction has been permitted. The trees easily reach an age of 200 years. They yield cork in their thirtieth year and continue to do so every seven years. Seventy-five years ago the English demand for cork was supplied exclusively from Italy. The destruction of the remaining forests goes on uninterruptedly, and nobody seems to try to prevent it or to plant new forests, in spite of the fact that Italy possesses the most favorable climate and soil for the cork oak, the most favorable conditions for its growth being found in the volcanic soil of the peninsula.

RICHARD GUENTHER,
FRANKFORT, GERMANY, *August 24, 1903.* *Consul-General.*

IRON AND STEEL INDUSTRY OF RUSSIA.

(*From United States Consul-General Holloway, St. Petersburg, Russia.*)

The Trade and Industry Gazette of this city has just published the following statistics on the iron, pig-iron, and steel industry in Russia during 1902.

PIG IRON.

The total smelting of pig iron in different regions of the Empire during the last six years is shown by the following figures:

Region.	1897.	1898.	1899.	1900.	1901.	1902.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
South of Russia	834,600	1,108,380	1,490,330	1,673,000	1,671,500	1,530,500
Ural	739,900	803,450	821,500	912,950	891,209	810,675
Poland	253,500	289,970	341,700	331,250	359,500	313,350
Central	196,500	204,650	268,440	253,200	191,200	151,330
Northern	4,870	27,450	33,680	36,870	20,165	33,923
Southwest	3,033	3,402	3,086	1,922	260	....
Northwest	810	1,100	862	814	973	....
Siberia	11,712	13,123	5,426	5,610	4,520	3,614
Total	2,044,925	2,451,525	2,965,024	3,215,616	3,139,327	2,843,392

The decrease in smelting pig iron in 1902 consisted of about 372,224 tons, or 11.8 per cent, compared with the highest yield in 1900. If the blast furnaces of Russia could secure a market for their products they could produce 4,700,000 tons of pig iron yearly; that means that the working capacity of Russian pig-iron smelting works in 1902 exceeded the yield by about 1,800,000 tons, or 66 per cent.

In the south of Russia the smelting of pig iron decreased in 1902 by 141,000 tons, or 8.4 per cent. Instead of 31 high furnaces in work for January 1, 1902, only 23 were worked for the term of January 1, 1903; instead of 6 furnaces in repair, there were 13; and instead of 15 furnaces, although finished, 18 were not working.

The decrease in pig iron smelted by the Ural works, compared with 1900, was 101,275 tons, or 11.3 per cent. There were 116 high furnaces at work January 1, 1902; 95 on June 1, 1902; 78 October 1, 1902; and 99 January 1, 1903.

In Poland the maximum yield was reached in 1901 and a decrease of 46,180 tons, or 12.8 per cent, in 1902.

The maximum yield in the central Provinces was in 1899, from which date there was a steady decrease, reaching in 1902 117,110 tons, or 43 per cent, compared with 1899, notwithstanding the fact that the Lipetzky works of the Tambov Metallurgical Society, which was opened in 1892, yielded 26,140 tons of pig iron. This work was brought to a standstill in May of the current year, as well as the Shipov works of the Nizhni Novgorod government, which yielded 25,340 tons of pig iron in 1902. This shows that the capacity of the central region is rapidly decreasing.

The northern region shows almost the same level of pig-iron production during the last four years.

There was no yield of pig iron in the southwest and northwest regions, and the production of pig iron in Siberia has been declining since 1898.

The change in the yield of pig iron was least in Poland, which is of great importance to the Russian metallurgical industry, as Poland is not able to furnish sufficient raw material to meet the demand.

IRON AND STEEL.

The following table shows the yield of iron and steel in Russia during the last six years:

Region.	1897.	1898.	1899.	1900.	1901.	1902.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
South of Russia	450,000	658,890	910,720	954,724	1,101,792	1,000,783
Ural	430,460	479,090	483,915	511,610	532,000	498,360
Poland	249,600	259,600	261,187	367,590	302,115	283,340
Central	198,100	166,773	191,470	183,700	222,454	170,190
Northern	211,200	199,037	172,597	151,970	149,200	124,023
Southwest	2,100	1,911	1,970	2,033	1,105	....
Northwest	20,000	6,087	32,742	25,896	27,831	45,180
Siberia	3,975	4,560	3,760	1,900	1,807	1,807
Total	1,565,435	1,775,948	2,058,361	2,199,423	2,338,304	2,123,683

The figures furnished by the Statistical Bureau of the Council of Metallurgists of the South, stating the yield of the iron and steel articles by the southern works, were as follows:

Prepared.

Description.	1902.	1901.
	Tons.	*Tons.*
Assorted metal	241,700	216,447
Beams and elliptic iron	122,675	99,700
Sheet iron of all sorts, except ridge-iron plate	133,910	157,690
Ridge-iron plate	18,272	13,477
Railway rails	288,820	350,870

Thrown upon the market.

Description.	1902.	1901.
	Tons.	*Tons.*
Assorted metal	213,845	182,928
Beams and elliptic iron	115,763	99,760
Sheet iron of all sorts, except ridge-iron plate	88,900	114,907
Ridge-iron plate	17,630	11,895
Railway rails	307,933	327,321

The decrease in the yield of iron and steel by the southern works, as compared with 1901, was 32,847 tons.

The three works which produce rails on the Ural—viz, the Nizhni Saldinsky, Nadejdinsky, and Katav-Ivanovsky—increased their production, as shown by the following figures:

	Tons.
1902	91,100
1901	90,950
1900	80,000
1899	64,395

The decrease in iron and steel production in Poland is given at 18,778 tons, or almost 5 per cent; 52,264 tons, or 24 per cent, in the central region; and 25,176 tons, or 17 per cent, in the northern region. The Libau works of the northwest region alone increased its capacity and yielded 45,200 tons.

IMPORTS OF IRON AND STEEL.

Comparing the figures of foreign iron and steel imported shows that the import of iron and steel, not worked, has rapidly decreased, viz, 82,055 tons in 1902, against 116,170 tons in 1901 and 128,130 tons in 1900; whereas the import of thin sheet iron has increased, viz, 27,600 tons in 1902, against 27,090 tons in 1901 and 24,650 tons in 1900.

IMPORTS OF AGRICULTURAL MACHINERY.

A considerable and steady increase is observed in the import of agricultural machinery and implements, which were classified as follows:

Article.	1900.	1901.	1902.
	Tons.	*Tons.*	*Tons.*
Ordinary machinery	20,837	22,555	23,765
Locomobiles, with complicated thrashing machines and steam plows	6,795	6,920	9,450
Complicated agricultural machines	15,675	19,245	26,960

W. R. Holloway,
St. Petersburg, Russia, *August 28, 1903.* *Consul-General.*

RUSSIAN IMPORTS OF IRON AND STEEL AND MACHINERY.

The following has been condensed in the Bureau of Statistics from a report by the German consul at Riga, Russia:

Iron.—Russia's iron imports in 1900 were 3,200,000 poods (57,830 tons*); in 1901, 1,800,000 poods (32,530 tons); in 1902, 1,100,000 poods (19,880 tons). Much of this went into the Empire by way of Riga. In recent years Riga is seeking her supply of raw iron in the iron mills of Russia. The kinds that come into the Riga country, by way of its harbor, are especially prepared irons—particularly charcoal iron. Twenty-eight and eight-tenths of Russia's importations of raw iron reach her by way of the Empire's Baltic ports. The importation of iron in bars, rods, plates, etc., amounted in 1899 to 15,900,000 poods (287,350 tons); in 1900, 5,700,000 poods (103,012 tons); in 1901, 5,300,000 poods (95,783 tons); and in 1902, 3,700,000 poods (66,867 tons). The falling off in bar iron was from 8,059,000 poods (145,644 tons) in 1899 to 1,145,000 poods (20,693 tons) in 1902; in iron plates, Nos. 25, Birmingham caliber, from 6,102,000 poods (110,277 tons) in 1899 to 1,058,000 poods (19,121 tons) in 1902; in plate irons above Nos. 25, from 1,757,000 poods (31,753 tons) in 1899 to 1,526,000 poods (27,572 tons) in 1902. The larger part of this trade was once in the possession of Germany. The falling off is put down to Russia's protective tariff and to the constantly improving character of the iron produced in Russia.

Steel.—The importations of steel were 2,374,000 poods (42,904 tons) in 1899, 1,111,000 poods (20,078 tons) in 1900, 795,000 poods (14,548 tons) in 1901, and 718,000 poods (12,976 tons) in 1902. The falling off in steel bars, rods, etc., was from 1,898,000 poods (34,300 tons) in 1899 to 586,000 poods (10,590 tons) in 1902; in sheet steel, up to Nos. 25, from 423,000 poods (7,657 tons) to 110,000 poods (1,990 tons); for numbers above 25, from 53,000 poods (958 tons) to 22,000 poods (398 tons). Here, again, the enterprising spirit, intelligent activities, and imitative faculties of the Russian people are reaping their usual reward. England and Germany are the sufferers.

Iron and steel rails.—The rails and railroad material imported into Russia in 1899 amounted to 746,000 poods (13,482 tons); in 1900, to 304,000 poods (5,494 tons);

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* Ton of 2,000 pounds.

in 1901, to 81,000 poods (1,464 tons); in 1902, to 55,000 poods (994 tons). Here is a falling off that means the ultimate extinction of this line of imports. The reasons assigned for this decline is the Russian Government's regulation or ruling that all material used in the public works of the Empire must be home made.

Machinery.—The total importations of machinery were, in 1899, 11,800,000 poods (213,253 tons); in 1900, 8,700,000 poods (157,229 tons); in 1901, 6,000,000 poods (108,434 tons); in 1902, 5,600,000 poods (101,205 tons). In the year 1902 3,600,000 poods (65,060 tons) went in for manufacturing and 1,800,000 poods (32,530 tons) for agricultural purposes; in 1901 the amounts for these purposes were 3,400,000 poods (61,446 tons) and 1,600,000 poods (28,915 tons), respectively. Complicated agricultural machinery still finds a market in Russia. Germany has had a large part of the trade in machinery. In 1902 her share was worth 24,000,000 rubles ($12,360,000). In the order named followed Austria, Hungary, the United States, Sweden, Belgium, and France. In agricultural machinery Germany still leads and is followed by Sweden and Great Britain. Of the imports of machinery for manufactures Great Britain supplies two-thirds and Germany one-third.

An official report to the Austrian Government says that steel is playing a more and more important part in the Baku regions of Russia. During recent years the importations of steel-wire ropes diminished steadily. This was due to the erection of works in that part of Russia. The city of Baku has established two in the last two years. Cable chains for tank steamers are all imported, mostly from Great Britain, which practically controls the market, Austrian works being unable to compete with British producers.

AFFAIRS AT VLADIVOSTOCK.

(*From United States Commercial Agent Greener, Vladivostock, Siberia.*)

Beet-sugar factory.—Experiments made with local beet-root plants have proved so satisfactory that a company has been formed to start a factory here. The only impediment is the great initial cost, too much for individual enterprise.

Duty on American flour.—Our local merchants find their troubles with the custom-house endless. On July 2 they were notified that all American flour would be subject to duty, and even the American flour now on hand must pay the newly imposed impost. This policy is in line with the method pursued on the closing of Porto Franco in 1901, when our merchants were obliged to make an inventory and pay duty on all foreign goods on hand.

Siberian salmon for European Russia.—The committee on tariff revision in session in St. Petersburg has suggested the reduction of freight rates for salmon sent via Siberia to European Russia. Salmon are abundant in the Lena and Yenisei rivers, and especially so in the Amur. A reasonable reduction in freight would raise the export 55,000,000 pounds annually. This same committee has slightly increased the duty on honey, porter, and beer.

Coal.—N. Makofski, manager of the coal-mining firm Makofski & Co., referred to in a previous report, no longer keeps coal on storage at De Castries Bay. This firm is a lessee of the Government coal mines on Sakhalin Island. Its predecessor, the Sakhalin Mining Company, wound up its affairs in 1900. Since that time, the present firm has expended more than $25,000 on improvements here and at Sakhalin. Opposite Vladivostock it has large houses and much coal ready for the Government steamers.

Westinghouse air brakes.—Soon all the mail trains of the Ussuri Railroad will be supplied with Westinghouse air brakes.

Russian land banks.—The Russian land banks loan money on submortgages of real estate. The banks are under the Ministry of Finance. In the future all loans on city realty must not exceed 40 per cent of the valuation if centrally located, nor 30 per cent if in an outlying district. All appraisements must be made by the sworn agents of the bank, according to a recent notice. In consequence of this order, much work on private buildings in Vladivostock has ceased, because anticipated loans from the Imperial Bank of this city have been ordered stopped. There are two agencies of Russian land banks here. They loan money to owners of real estate on twenty years' time at the low interest of 5½ per cent a year. Several enterprising persons had begun the erection of valuable buildings and had made the usual preliminary application for loans to one or other of the banks on the usual terms on completion of buildings. Meanwhile, they went on with their work by borrowing money from private parties at high rates of interest. Now, having waited almost a year, they are notified that the Minister of Finance has ordered the land banks to discontinue all loans on mortgages at Vladivostock. There are several cases where the losses are severe. As a consolation they are told they may rely upon loans if they should build at Dalny.

RICHARD T. GREENER,
VLADIVOSTOCK, SIBERIA, *July 3, 1903.* *Commercial Agent.*

COASTING TRADE OF SIBERIA.

(From United States Commercial Agent Greener, Vladivostock, Siberia.)

The whole coasting trade between Vladivostock and adjoining places contiguous to the Peter the Great Bay is in the hands of the Chinese. There has been much heated discussion how to take this business from alien hands and place it in the hands of Russian subjects, but nothing has resulted thus far.

There are a few Russian sailing schooners and some vessels of the Chinese Eastern Railroad cruising along the coast, but they can not, it seems, displace the hundreds of Chinese boats which carry the bulk of the local products. It is recommended that a sufficient number of barges be provided for all the ports where the Chinese Eastern Railroad steamers touch. Such barges, like the Chinese junks, should be adapted to shallow water. They should be suitable for carrying agricultural products and timber. Knowing the schedule time of the steamers, the barges could be loaded up in time to be taken in tow. When cargoes are discharged here the barges could be towed back again. A second suggestion throws light on the limitations in national mercantile marine matters in this Province. Russian subjects are not allowed to settle at will along the coast and establish villages, farms, etc., unless they are employed in the fishing industry. There is an abundance of fish, but of a variety the Russians do not fancy for food, using it almost exclusively for manure. The Russian peasant is not a fish eater and the fisherman's life offers no attraction to him. It is too laborious and dangerous. But the suggestion that they be allowed to settle along the coast, independent of the fishing profession, and that they would soon become mariners and gradually crowd out the Chinese junk men seems to be accepted as a solution of the problem. By Russian law two-thirds of the crews on all Russian vessels must be Russian subjects. All masters, mates, and engineers must be Russians.

Some foreign commercial firms have been for some time using their influence with the marine authorities at St. Petersburg to have this law modified on the Asiatic coast and thus permit the employment of Japanese, Chinese, and Koreans at least from this port to southern ports in Korea, Japan, and China. It is understood, however, that the harbor master is utterly opposed to this plan.

RICHARD T. GREENER,
VLADIVOSTOCK, SIBERIA, *July 3, 1903.* *Commercial Agent.*

ELECTRIC LIGHTING AND WATERWORKS AT VLADIVOSTOCK.

(*From United States Commercial Agent Greener, Vladivostock, Siberia.*)

With admirable natural facilities for drainage and numerous natural wells, the water supply of Vladivostock still remains inadequate and bad. The city expends $900 per day for water supply for its inhabitants, an average of three pails per day to each person at 1.5 cents per pail of 3 gallons. The property valuation of Vladivostock is estimated at $6,000,000; hence the city losses $316,210 per year. Insurance naturally is high. Once in a while there is a serious fire, for which the fire department is unprepared to deal effectively. One of the old pattern steam fire engines, long superseded in the United States, would be invaluable here.

The great needs of the place are a suitable reservoir and waterworks and a city electric-light plant, both of which have been discussed, estimates made, and plans drawn, but as yet with no definite outcome. A Russian company, the Neptune, would build the waterworks for $515,000, a slight advance over the city's annual expenditure for water. An English firm made a favorable offer for the electric plant, which was for a time under consideration and is now before the municipal board. A Seattlé firm had this same electric offer under consideration but could not see its way clear to accept it. The trouble is the anomalous condition of affairs. Vladivostock, technically, is still a fortress, with a commandant, whose jurisdiction would naturally embrace the entire fortress. But there is also a military governor of the entire seaboard Province, whose official residence is Vladivostock; then there is an admiral of the port, whose official residence, transferred from Nikolaefsk years ago, is also here; and lastly there is the elected mayor of the city, or "appointed," as the present one was, who has a small council to keep in check, or guide, and smaller revenues from city taxpayers to pay the increasing expenses. If the large expenditures of the Imperial Government for army, naval, railroad, and hydrographic purposes were only a part of an imperial supervision looking to the improved municipal, sanitary, and commercial condition of this city, Vladivostock would soon be the rival of St. Petersburg and Moscow, under conditions, too, not possible for those cities. It has a situation unsurpassed, climate never excessively cold or hot, fog never of long duration, a harbor open at all times to the entrance and clearance of vessels, and a population as cosmopolitan as that of London or New York.

RICHARD T. GREENER,
VLADIVOSTOCK, SIBERIA, *July 3, 1903.* *Commercial Agent.*

COMMERCIAL REPRESENTATIVES FOR THE ORIENT.

(From United States Consul Monaghan, Chemnitz, Germany.)

It is probably not a very difficult task to find German manufacturers who are not enthusiastic about the oriental trade for the reason that they have, at one time or other, suffered losses through being made victims of unscrupulous eastern agents who wheedled them into business transactions by misrepresentations and chicanery. Sometimes, probably, the real blame must be attached to the manufacturer for having permitted himself to be an easy mark and for not inquiring into the standing and reputation of the man with whom he was to deal. Yet it must be conceded, in view of the past experience of exporters who have done business with the East, that the choice of reliable commercial representatives is by no means an easy undertaking. The necessity of having a trade representative in the Orient can not be questioned. Even in cases where business is done directly with firms, it is said to be advisable to employ a representative at the same time. There are a thousand and one things which require attention and which can not be properly attended to by long-distance correspondence.

In a recent article in the Austro-Hungarian Export Review, the question of the selection of commercial representatives for the Orient is dwelt upon and many valuable suggestions given for the exporter interested in the eastern trade.*

Just what sort of a representative it may be politic for a European firm to engage depends largely upon the nature of the goods in which business is to be done. If a business is to be conducted upon a wholesale plan it is wisest to attempt to engage a "big representative," who has been in the business for a long time and can show unmistakable proof of honesty and business integrity. Generally it is difficult to engage such firms, because very frequently they are already in the service of some prominent competitor who came first upon the field. Then also they are, as a rule, crowded with work, as men with unblemished reputations who are capable of running a large wholesale business in the Orient for a European exporter are rare and can not be picked up every day. But it is said that though these big representatives may be reluctant to undertake any more European business, if they can be prevailed upon to do so great confidence may be placed in the results. Business may pick up but slowly at first, but there is no need to worry about the execution of contracts.

In case of articles which are to be pushed in the markets upon a small scale, and mainly in the retail trade, the engagement of some smaller representative is said to be advisable. It is especially in such cases that great circumspection is necessary in making a choice. While it may be comparatively easy to choose a reliable agent among the largest firms of the place, this is not the case where smaller firms are under consideration. Many of these have been upon the blacklist for years, yet manage to cover up their tracks so shrewdly that the unsuspecting are easy prey, and even the most circumspect tread on dangerous ground. If great care is taken one may find a firm of young men who are reliable, enterprising, and energetic.

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*The term "Orient" is generally used in German papers in a narrow sense, as confined to the immediate East or the Levant, though the points here brought out apply equally well to the far East.

These facts, as they are disclosed in the Export Review already referred to, ought to be sufficiently plain to show that oriental representatives can not wisely be engaged through the mails and without the most scrutinizing investigation. To strike a choice among those who offer themselves through correspondence is the height of folly, unless they are in a position to produce indisputable evidence of their responsibility and integrity, preferably guaranteed by some well-known and prominent eastern firm which has consented to act as a sort of protector.

Under date of August 18, 1903, I submitted a report upon the opportunities for exporting American hosiery to the Orient by way of Germany,* and called attention to the intelligence of the oriental buyer in matters pertaining to his business and the thoroughness of his knowledge of textiles and textile prices. The eastern buyer is known to possess unusual natural keenness and business ability, and where he combines with this a bent to trickery and sharp practice he becomes a dangerous man to deal with through long-distance correspondence. For this reason the facts here presented can not be too seriously taken to heart by American exporters to the East who are new in the field and who desire to shield themselves from loss.

J. F. MONAGHAN, *Consul.*

CHEMNITZ, GERMANY, *August 29, 1903.*

NEW ZINC WORKS IN SWEDEN.

(*From United States Consul Bergh, Gothenburg, Sweden.*)

A large establishment for smelting or extraction of zinc by a method invented by Dr. Gustaf de Laval is being built at the Hallstahammar Works, in the Province of Vestmanland. The method is the same as that by which fine results have been obtained both at Trollhättan and in Norway. The power station for the establishment is located at Hallstahammars Bruk, close to the railroad station of the same name, where the Kolbäck Creek (Kolbäcksån) falls 35 feet. All work on the power station is carried on by the Hallstahammar Company, which for this purpose employs about 300 men. The establishment is expected to be finished this year.

Dr. de Laval is a well-known inventor who resides in Stockholm, and in his method above referred to electricity is used in smelting or extracting the metal, as reported in my note of January 12, 1903.†

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*See DAILY CONSULAR REPORTS No. 1758 (September 25, 1903).

†Published in ADVANCE SHEETS No. 1568 (February 11, 1903).

A similar method, invented by the French engineer Heroult, is used by steel works at Kortfors, Sweden, with good results, it is said. At Gysinge Bruk, Gysinge, Sweden, electricity is also used in the manufacture of steel, as previously reported.*

Thus it seems that the use of electricity in metallurgy is gaining ground, especially in places where coal is expensive but water power plentiful.

ROBERT S. S. BERGH, *Consul.*

GOTHENBURG, SWEDEN, *September 11, 1903.*

ELECTRICITY INSTEAD OF COAL FOR SWISS RAILWAYS.

(*From United States Consul-General Hughes, Coburg, Germany.*)

Owing to the increase in the price of coal during the last few years, Mr. Thormann, a prominent Swiss engineer, wished to find out whether it would not be an advantage to use electrical energy, furnished by hydraulic plants, over the whole of the railroad system of Switzerland. After investigating the subject he published a report which has awakened considerable interest and will no doubt bring about some practical results in this direction. He finds that the substitution of electricity for steam on the railroads is quite practicable and has many advantages, although it will not bring about any considerable reduction in the cost of operating the roads.

The five main railroads in Switzerland require over 30,000 horsepower daily. In order to organize a complete electrical service it will be necessary to obtain about 60,000 horsepower in the shape of the alternating current of high tension, not counting the reserve supply, which is indispensable. Not taking into account the considerable number of falls which are not utilized in the country, there exist already 21 large hydraulic plants which can give a total of 86,000 horsepower. These include the plant of Siel, near Linsiedl, which has a capacity of 20,000 horsepower; the Laufenburg plant, on the Rhine, giving also 20,000 horsepower; and five others, giving each 5,000 horsepower. He enumerates 21 plants, which will be more than sufficient to supply the energy for the Swiss railroads.

The cost of changing over the system would, of course, be considerable. It is to be noted, however, that the adoption of the electrical system would have the great advantage of doing away with the present consumption of coal, which is now imported, and that the use of hydraulic energy would be of great benefit in developing several branches of manufacturing.

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*Published in ADVANCE SHEETS No. 1388 (July 10, 1902).

The publication of Mr. Thormann's report aroused considerable attention in different quarters, and already one of the railroad companies has applied to the Government for an authorization to use electric trains on a trial stretch of road 12 miles long.

OLIVER J. D. HUGHES,
COBURG, GERMANY *August 24, 1903.* *Consul-General.*

ENGLISH, FRENCH, AND GERMAN TRADE IN 1903.

(*Compiled in the Bureau of Statistics, Department of Commerce and Labor.*)

The imports for the British Empire for the first seven months of 1902 were $1,492,997,973; of 1903, $1,489,571,900. The exports for the same period of 1902 were $785,476,187 and of 1903 $819,509,694.

The imports for Germany for the first six months of 1902 were estimated to be worth $526,416,508; in the same period for 1903, $581,642,295. The exports for the first six months of 1902 were $422,303,430 and of 1903 $490,062,825.

The imports for France for the first seven months of 1902 were $500,118,584; in the same period for 1903, $531,976,901. The exports for the first seven months of 1902 were $465,775,199 and of 1903 $459,419,902.

Imports and exports of Germany for the past ten years.

Year.	Imports.	Exports.
1893	$1,067,025,400	$845,875,800
1894	1,081,710,000	797,276,200
1895	1,086,684,200	896,903,000
1896	1,165,962,000	988,223,600
1897	1,231,745,200	977,442,200
1898	1,367,310,000	1,026,065,600
1899	1,458,392,600	1,112,388,200
1900	1,524,651,800	1,214,133,200
1901	1,431,855,600	1,148,397,600
1902	1,450,253,000	1,221,130,400
Total	12,865,589,800	10,227,835,800

ENGLAND'S TRADE RELATIONS.

The Revue du Commerce Extérieur, in its issue of August 8, 1903, publishes some very interesting facts and figures on the commerce of England. It says that pamphlets are being published pro and con in regard to England's trade relations. It cites one that says that of 28 leading articles of export only 9 have increased in recent years, while 19 declined. The total increase for the 9 articles is £10,000,000 ($48,665,500), while the decrease on one article alone—manufactures of iron and steel—was £20,000,000 ($97,330,000).

This statement, however, according to the Revue, is misleading. In 1887 England exported 4,143,028 tons of steel and iron (raw and manufactured); in 1901, 2,897,719 tons—a crucial year for metallurgy. But the total value of the 4,000,000 tons was £24,992,000 ($121,623,568) in 1897, £25,282,000 ($123,034,853) in 1900, £31,992,075 ($155,909,433) in 1901, and £29,221,799 ($142,207,785) in 1902. England has exported less raw iron and rails, but the total value was as high in 1901 as in 1887 and increased £4,229,000 ($20,580,428) the year after, when the crisis had diminished. England's commercial decline or decadence is only relative. She is still the world's greatest consumer. She still remains the rival of the United States in exports. Germany approaches her with rapid strides. In 1902 she imported $2,573,697,190, of which $320,269,232 were goods in transit. The exports for that year were $1,379,847,410. In 1901 the figures were: Imports, $2,540,264,335; goods in transit, $330,148,226; exports, $1,362,727,063. In 1891 they were: Imports, $2,119,073,627; goods in transit, $314,195,840; exports, $1,154,504,127. In the year 1887 the figures were: Imports, $1,761,356,677; goods in transit, $288,821,908; exports, $1,077,511,231. German imports in 1902 amounted to $1,067,602,467 and the exports to $951,141,635; in 1901 Germany imported $1,046,298,355 and exported $855,269,464. In 1891 the figures were: Imports, $801,104,400; exports, $612,871,500. In 1887 they stood: Imports, $603,067,100; exports, $605,112,900.

During those years the United States imports increased very rapidly. They were $1,025,751,538 in 1902–3; the exports, $1,420,138,014. In 1901–2 the imports were $903,320,948; the exports, $1,381,719,401. In 1900–1901, the imports were $823,172,165; the exports, $1,487,764,991. In 1890–91 the figures were: Imports, $844,916,196; the exports, $884,480,810. In 1887 the imports were $692,319,768; the exports, $716,183,211. These figures, it says, furnish an economic event, or a series of events, of wide-reaching importance. There is no recoil, nor really any standing still.

In 1887 Great Britain's exports went up to £221,414,000 ($1,077,511,221)—British products only. In 1891, after the Barings crisis, they attained £237,235,000 ($1,154,504,027). Ten years later they had increased £42,787,000 ($208,222,935). During the last year a further increase of £3,500,000 ($17,032,750) is to be noted. In other words, British exports increased 28 per cent in fifteen years, while those of the United States doubled, and those of Germany advanced 60 per cent.

BRITISH ENGINEERING STANDARDS.

(*From United States Consul Halstead, Birmingham, England.*)

The inclosed clipping from the London Times of August 31, giving a short review of the report of the Engineering Standards Committee, prepared by the secretary, Mr. Leslie S. Robertson, is of interest.

The Department has printed, at my request, several of the Times' reviews of the publications describing the work of the British Engineering Standards Committee,* and as a result I have had a number of applications for the address of the publisher, Robert Atkinson (Limited), Salisbury House, London Wall, E. C., London. The committee's reports are so important to American engineers that I submit for publication in the CONSULAR REPORTS the following letter, dated August 31, 1903, in reply to my inquiry for a list of the pamphlets which have been issued.

Mr. Robert Atkinson to Consul Halstead.

DEAR SIR: In reply to your favor of the 28th instant, we beg to say that the findings already issued by the Engineering Standards Committee consist of:

Sections of Constructional Iron and Steel (angles, tees, beams, etc.); price 1s. (24 cents). (The tables of inertia, weights per foot run, etc., relative to these, will be issued in a few weeks.)

Tram Rail Specifications, price 1 guinea ($5.10).

Under the authority of the committee we are issuing the Coded Lists of their findings, the first volume of which will contain all the above material, and lists of all British manufacturers and merchants in these particular sections, with the sizes they roll or stock. The volume will also contain a compendious code for use between buyers and sellers, and every standard section will also be codified.

The price of this first volume will be 10s. ($2.43).

MARSHAL HALSTEAD, *Consul.*

BIRMINGHAM, ENGLAND, *September 1, 1903.*

THE ENGINEERING STANDARDS COMMITTEE.

[From the London Times.]

A short review of the Engineering Standards Committee has been issued by the secretary, Mr. Leslie S. Robertson, who concludes that "the epitome sufficiently indicates the enormous importance of the work in hand to the trade of the Empire. The Premier, Mr. Arnold Forster, Sir John Wolfe Barry, and others have expressed opinions as to the immense value of its labors, the result of which it is difficult to overrate if they are as loyally supported by the trade and commerce of this country as by the Government and its various departments."

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* See ADVANCE SHEETS No. 1710 (July 30, 1903).

The movement was set on foot in the beginning of 1901, when the five leading technical institutions—civil engineers, mechanical engineers, naval architects, iron and steel institute, and electrical engineers—supplied funds and formed committees in order to introduce into this country a national standardized system, and thus bring British manufacturers into line with their American and German rivals. The work grew enormously, and the Government, recognizing its national importance, made a grant of £3,000 ($14,600) toward the expenses, and now the leading manufacturers are also subscribing to the support of the Engineering Standards Committee. No fewer than 27 committees have been at work during the past three years, with 170 members, including 25 representatives of Government departments, and the result of their labors so far is very satisfactory.

Referring to the committee on bridges and general building construction, presided over by Sir Benjamin Baker, the report says that their labors have been confined principally to drawing up a series of standards so as to meet all the requirements of general building construction, and they have succeeded in making a considerable reduction from the large number formerly in vogue, and some of the leading firms have already adopted them.

In the matter of tramway rails, the subcommittee have agreed upon a series of standards which have been approved by the Board of Trade and have even been rolled abroad, and the report of the subcommittee on railway rails is nearing completion.

The standardizing of electrical plant is presided over by Sir William Preece, and four subcommittees have been doing a lot of useful work. The subcommittee on generators, motors, and transformers have been collecting evidence for the determination of standard voltages and frequencies, and also the standard sizes for dynamos and motors. The other electrical committees deal with such subjects as cables and conduits, telegraphs and telephones, and the temperatures of insulating materials.

The Indian government appointed a conference to discuss the question of standard types of locomotives, and they have referred some of their findings to be dealt with by the Engineering Standards Committee and five committees have since dealt with the various branches of Indian locomotives and submitted a report to the Secretary of State for India, setting forth the types of locomotives which they think best adapted for Indian railways. It is anticipated that great advantages will be gained by the interchangeability of the different parts of locomotives, the object being to enable the British manufacturers to deal with the Indian orders and deliver the material more quickly, an advantage hitherto held by Americans and Germans through their system of standardization.

The work of the shipbuilding committee has been under the chairmanship of Mr. Archibald Denny, and their object has been to decide upon a series of sections which would give sufficient graduation and yet not be larger than could possibly be avoided, so as to reduce to a minimum the plant and stock of rolls to be kept by the steel makers. This committee has also been discussing the sizes of test pieces for iron and steel material used in the construction of ships and their machinery with the object of arriving at a common basis of agreement between the many divergent specifications and restrictions at present in vogue.

It may be mentioned that the French Government have sent over a commissioner to study the procedure and the lines upon which the Engineering Standards Committee has been organized.

DISEASES OF STEEL AND THEIR TREATMENT.

Under date of September 4, 1903, United States Consul Halstead, of Birmingham, England, transmitted the following printed extract of a paper read before a meeting of an institute in that city relative to the diseases of steel and their treatment:

Mr. C. H. Ridsdale (Middlesbrough) presented a paper on "Diseases of steel," referring primarily to soft steel. He said that, with all our progress in the study of steel, there is still no definite and approved system of tests published for recognizing its "diseases" and determining their origin by the results of which those concerned will abide. Analysis failed to explain most of the troubles met with. He had attempted to collate various types of faults. He had pushed his investigation from both ends—forward by synthetical reproduction of known irregularities of manufacture, and backward from the manifestation of the disease till its unknown cause was detected. He remarked the one great hindrance to progress in tracing faults to their origin was the strong hold various notions had, which, though perfectly right in a general sense, when carried to an extreme were misleading. One such notion was the extent to which impurities, particularly sulphur and phosphorus, were hurtful. Nothing was farther from his wish than to advocate indiscriminate laxity in the matter of impurities. What was wanted was not to advocate stretching the limits in order to admit inferior material, but only to face fairly whether or not by raising the limits in many instances a material answering the requirements as well, or sometimes better, would be obtained more cheaply or readily. Another mistaken notion was that the maker ought to render his material proof against being spoiled in successive working-up processes. The fact was that no make of steel had yet been met with that could not be spoiled quite simply. The author then considered at length the various diseases to which steel was subject, and continued that it would be far too bold a claim to pretend for one moment that as soon as the disease had been successfully traced and identified a commercially applicable remedy could be at once suggested. To avoid brittleness and hardness and to obtain toughness and softness with a minimum of trouble, he advocated reheating rapidly after the steel had become cold and deprecated continuing to heat steel which was already hot. Respecting the cure of faults already produced in material, this, from the nature of the product, was often scarcely possible, as, for instance, where through red shortness or hardness cracks or fracture, respectively, had actually occurred; in other cases a cure was not practicable, the cost being prohibitive. Still, there were some cases where a very simple heat treatment or similar remedy would be quite effective and at a very slight cost.

Mr. J. E. Stead said that it would have been better if Mr. Ridsdale had termed his paper the "ailments" of steel. He did not think that steel had many diseases. They were chiefly ailments which might easily be cured. The diseases Mr. Ridsdale referred to could be mostly removed by a very simple reheating treatment. He would refer to only one point. When engineers made specifications it should in justice to them be said that they did so with the object of getting materials of the very best character. It was quite possible for steel containing high impurities, properly treated, to be better than the very purest material improperly treated, but it must be remembered that for engineering work the lower the phosphorus in the steel the better, and if such steel were also properly treated and forged it would be always better than a material which contained a higher amount of impurity.

Professor Turner (Birmingham) said the institute was very much indebted to Mr. T. R. Ridsdale for his attempt to put on a scientific basis a method of investigating defects of steel and iron. He was very glad to see that Mr. Ridsdale advocated the synthetic method of discovering the causes of the defect. He himself had tried to discover the cause of blisters on wrought iron in this way. He had introduced into a specimen those constituents which were supposed to be the cause of blisters, but the blisters did not follow. The explanation, he thought, was that one need not only to have the materials necessary to produce the fault, but the proper conditions also.

BRITISH MOTOR-CAR ACT.

Under date of September 9, 1903, United States Consul Halstead, of Birmingham, England, transmits articles from the Birmingham Daily Post of August 29 relative to the British motor-car act, which comes into operation on January 1, 1904. The following abstracts of an editorial in the Post—the law itself being too long for publication—gives a full enough idea of the scope and intentions of the act:

Although the act does not come into operation before the first day of 1904, there are several matters which will require attention in advance, as, for instance, the registration of cars, the licensing of drivers, and the framing of regulations by the local government board with regard to identification marks. It will be well, therefore, that motor-car owners and the general public, and certainly the police, should make themselves conversant with the new act before the end of the year. It is probable, too, that car builders will occupy their time in devising the most convenient means for exhibiting the identification marks, which, it will be observed, are to be "easily distinguishable," day or night. Every motor car will have to be registered with the council of the county or borough in which the owner resides, and every car will be assigned a separate number. A mark indicating this registered number must then be fixed on the car, and there is a substantial penalty for omitting to keep this mark easily distinguishable. The fee for registration is 20s. ($4.86) for a car and 5s. ($1.20) for a motor cycle; from which it must be understood that a motor cycle is, for the purposes of this act, a motor car. Not only must the car or cycle be registered, but the driver of a motor car or motor cycle must take out a license, the fee being 5s., and this license may be suspended for any offense under the act. It will no longer be legally possible for any person to drive a motor car unless he is at least 17 years of age or to drive a motor cycle unless he is 14 years of age; and this license will have to be produced on the demand of a police constable. This requirement, if enforced as it should be, will prevent the licensed driver handing over the care of the car to any lady or gentleman passenger on board who has the ambition to try his or her hand "at the wheel," to the terror of all and the possible danger of many.

Two very drastic provisions will claim the serious attention of motor-car or motor-cycle drivers and owners, for owners will be under statutory obligation to give all assistance necessary to secure the conviction of an offending driver. There is Section I, which reads as follows:

"If any person drives a motor car on a public highway recklessly or negligently, or at a speed or in a manner which is dangerous to the public, having regard to all the circumstances of the case, including the nature, condition, and use of the highway, and to the amount of traffic which actually is at the time, or which might reasonably be expected to be, on the highway, that person shall be guilty of an offense under this act."

This is as clear as words can be, and anyone who drives a car or motor cycle on a public highway "recklessly or negligently, or at a speed or in a manner which is dangerous to the public," must reckon on paying for it; and if he refuses to give his name and address or to produce his license, or if his motor car does not bear the proper marks of identification, he may be apprehended without a warrant by any police constable. For a second offense there is the liability to imprisonment. One sentence in this first section is very important. The justices are to consider the use of the highway and the amount of traffic which may be "reasonably expected" on such highway, in judging of the recklessness or negligence of the driver. The provision gives the first claim to the road to its ordinary traffic. The motor driver must be always on the lookout for the traffic which has the prior claim to the use of the highway. Moreover, there is power under the act to prohibit or restrict the driving of any motor cars on any part of a road which does not exceed 16 feet in width or "on which ordinary motor-car traffic" would be especially dangerous. This action should bar the motor car out of many narrow country lanes, where it often proves a source of the utmost danger. Now we come to Section IX, which fixes a limit of speed. The fight for this speed limit was one of the features of the session, and we much question if the Government have heard the last of it. The section reads as follows:

"Section IV of the principal act (which relates to the rate of speed of motor cars) is hereby repealed, but a person shall not, under any circumstances, drive a motor car on a public highway at a speed exceeding 20 miles per hour, and, within any limits or place referred to in regulations made by the local government board with a view to the safety of the public, on the application of the local authority of the area in which the limits or place are situate, a person shall not drive a motor car at a speed exceeding 10 miles per hour."

A great many persons professed themselves unable to see the advantage of a fixed limit of speed. Yet the advantage is very plain. It is not always easy to prove actual "recklessness," nor "negligence," nor "danger," but, none the less, there may be an amount of personal inconvenience, public nuisance, and mind distraction, often producing temporary nerve failure, created by the rushing past on the highway of a powerful engine at a speed equal to that of a fast train; and it was felt imperative to put a stop, once for all, to any such speeds on the public highway of 30, 40, 50, and even 60 miles an hour. Motor road racing had to be abolished, all question of physical danger apart, and the utmost speed that the House of Commons would sanction was 20 miles an hour. It entirely depends on the motor-car and motor-cycle owners' reasonable conformity to this limit whether or not it will be reduced when the act comes up for revision at the end of three years. The second part of the same section requires explanation. What it says is that the local government board, "with a view to the safety of the public, on the application of the local authority," may define any limits or place within which a person "shall not drive a motor car at a speed exceeding 10 miles per hour." We shall certainly look to the local authority to apply to the local government board to fix this 10-mile speed limit to all the business streets of Birmingham, and the local authorities concerned should do the same with regard to other populous places. We commend this part of Section IX to the populations most concerned, who may be advised to bring pressure to bear on their local authorities to secure this additional safeguard against danger to themselves or their children using the public thoroughfare.

A few minor provisions deserve notice. There are the penalties. These are considerable, running up to a fine of £50 ($243), with the alternative of three months' imprisonment. As to speed, it is very properly provided that there shall be no conviction for exceeding the speed limit unless on the testimony of more than one witness. Chiefs of police should take special precautions for training their men to judge of the rate of speed. We doubt if many persons would satisfy a really rigid test. An automatic speed register affixable to all classes of motors would be a boon. Local authorities have under this act to undertake a duty too long neglected. They will have to erect not only notice boards indicating any special limitation of speed, but also notice boards "denoting dangerous corners, crossroads, and precipitous places where such notice posts appear to be necessary." Such notice boards have long been wanted and have only been in any degree provided by the enterprise of a private organization. We can notice only one more regulation. Section VI provides that "a person driving a motor-car shall, in any case, if an accident occurs to any person, whether on foot, on horseback, or in a vehicle, or to any horse or vehicle in charge of any person, owing to the presence of the motor car on the road, stop, and, if required, give his name and address and also the name and address of the owner and the registration mark or number of the car; and if any person knowingly acts in contravention of this section he shall be liable, on summary conviction, in respect of the first offense to a fine not exceeding £10 ($48.66), and in respect of the second offense to a fine not exceeding £20 ($97.32), and in respect of any subsequent offense to a fine not exceeding £20, or, in the discretion of the court, to a term of imprisonment not exceeding one month." It should seem strange that any such provision is needed, but the extraordinary callousness of a certain class of motor drivers has made it absolutely necessary. Indeed, this particular form of motor selfishness has done much to arouse the public indignation that called this act into existence.

GOLD MINING IN THE YUKON TERRITORY.

Under date of September 9, 1903, United States Consul-General A. W. Edwards, of Montreal, Canada, transmits the following extract from the Montreal Gazette of the same date, relative to the gold-mining industry of the Yukon Territory and the importance to Canada of its proper development and protection:

"History of Klondike Mining Concessions" is the title of a pamphlet issued by the Dawson Board of Trade, which says:

"In the latter part of the year 1896 the famous discoveries of placer gold were made on the creeks in the basin of the Klondike River. These were followed in the years 1897 and 1898 by the scarcely less famous placer-gold discoveries in the basin of Indian River and on the hills and benches adjoining all the creeks on which discoveries had previously been made. During the past two or three years rich placer ground has been found in the basin of the Stewart River, notably on Duncan, Clear, and Henderson creeks, also in the Forty-mile district. The more famous creeks in the Klondike basin are Eldorado, Bonanza, Hunker, Last Chance, and Bear, while in the Indian River basin Dominion, Sulphur, Gold Run, and Quartz are the most noted. Not only in the beds of the creeks in both Klondike and Indian River basins, but also on the adjacent hills and benches the wealth of placer gold discovered has been enormous.

"The proper protection and development of all these discoveries would have insured to the Yukon Territory a population of at least 100,000 souls. This population, being dependent almost wholly for food and supplies on the sources outside the Yukon Territory, would have afforded a large and unexcelled market to the rest of Canada for farm products and manufactured goods. The possibilities of this market have, we believe, not yet been understood or appreciated by the government, the industries, or trades of the rest of Canada.

"In the whole of the Yukon Territory, except around the town of Whitehorse, the prosperity of the whole population depends entirely upon the production of gold by the individual placer miner. A very large part of the people are engaged directly in this pursuit and the remainder are engaged in supplying the wants of those so employed. Anything which stimulates or retards this one industry equally stimulates or retards the prosperity of the whole community. The cessation of placer mining would result in the abandonment of the territory for the present by almost the entire population. Many of the rich early discovered claims have already, by wasteful and rough methods, been worked over, leaving a large part of the gold behind, and are now being reworked by our present improved placer-mining methods, which are obviously capable of immeasureably greater improvements, as the methods used by a few of our best operators show. But the greater part of the placer areas have to the present remained unworked, in some cases through lack of water, but generally because it requires a long time and much labor to prospect thoroughly so large a country, and because it was desirable in regard to low-grade ground in the earlier years to wait for (*a*) the reduction of royalty, (*b*) the cheapening of labor, and (*c*) the introduction of improved machinery.

"The work done thus far has taught our miners to work ground at a small fraction of the former cost and more thoroughly, and has located gravel beds of great extent over the whole Klondike and Indian River basins that can profitably be worked by present placer methods. Yet the Yukon is losing its population and all business is depressed."

GOLD FIELDS OF EASTERN NICARAGUA.

(*From United States Consul Gottschalk, San Juan del Norte, Nicaragua.*)

INTRODUCTORY.

Very little information was obtainable, seek it as one might, in the United States only a few years ago relative to the gold fields of Nicaragua. The official map of the Republic "patented in 1897 by H. G. Chalkley, for the Government of Nicaragua, the owner," showed then, as it does to-day, only vaguely and in small type one or two regiones mineras (mining regions)—the Pispis, Wawa, and Concepcion. Another map, often seen in Bluefields and originally printed at the instance of a lumbering enterprise there, bore only the names Prata Hills, Cuicuina, and Cuicuina mines, each surrounded by the alluring little yellow circlet that meant "gold." For the rest, one must needs have depended upon travelers' tales, each more or less highly colored by the dreams of the prospector.

GOLD EXPORTS.

A glance at the exportations of gold from the port of Bluefields alone, during the past three years, will show, however, that not only has the eastern coast of Nicaragua a valid claim to be known as a gold-bearing region, but that the gradual and steady increase in the exportations of the product since 1900 indicates a very systematic development of the gold fields in question—a development far in excess of that of any other gold-producing section of the country.

Exports of gold from Bluefields from January 1, 1900, to June 30, 1903.

Year.	Quantity.	Value.
	Ounces.	
1900	13,334¼	$216,507.25
1901	16,741	259,077.00
1902	22,718¾	339,056.80
1903 (first 6 months)	13,100	192,670.00

EARLY GOLD FINDINGS.

In the year 1885 one Julius Schultz was at work placer mining in Siuna, at the head waters of the Prinzapolka River. His work consisted entirely of washing gold from placers which he at various times located in his neighborhood. It is said that the stretches of gold-bearing sands in question were originally shown him by Mosquito or Sumoo Indians, although neither the Indian traditions nor any of the records of ancient Spanish occupation seem to refer to the presence of gold in this particular section of the country. Certain it is, however, that for some years Schultz, with no other help than that of a few Indian laborers, worked his gold deposits profitably. A firm at San Juan del Norte (Hoadley & Ingalls) shipped his gold for him and supplied him with his few necessaries. The concern having failed some years ago, there is no record available as to what quantities of gold were thus exported; still, these were large enough to arouse some comment in the press of the Gulf and Pacific coast States at home. A momentary interest was thus excited, but the costliness of the enterprise to a stranger, the long canoe trips up the rivers (which are absolutely the only highways of this entire section), and the necessity of learning the Mosquito tongue or kindred dialects (Sumoo, Woolwa, Tawaweera, Rama, etc.) did much to deter immigration.

In 1889 Schultz himself visited the United States and shortly after a number of prospectors, chiefly from California, began to seek the new field.

Schultz later retired from the country on a competence, which he had amassed in the Siuna region.

About 1892 Paul Rener, a prospector, while working in the same Siuna district, located a placer deposit in a dry creek and staked out a claim called "El Dorado." He is said to have located three "pockets" between the years 1892 and 1894, and is popularly reported to have extracted therefrom some $30,000 worth of gold. About the same time, some miles up Wawa River, one Biebel found an outcropping on a claim, which he called "El Coco," and on mere surface work is said to have netted sums aggregating from $20,000 to $40,000. Later he worked in the same region in company with others, among them O'Neill, a Colorado miner, who bought him out in the course of time and finally himself retired, some say with as much as $50,000, earned in the Wawa "diggings."

In 1892 still another prospector, John Mueller, assisted by a prominent Bluefields merchant, located a number of profitable claims on the River Coco (or "Wanks," as it was formerly more often called), which placers are still worked. The parties most interested confess that there was much bad management at the start, which ate up the profits of what almost everyone admits to have been the most promising placers located in the neighborhood of the Coco River.

MINERAL REGIONS.

The news of the discoveries—productive in four or five instances of what to many men would have been a competence to retire upon—encouraged prospectors to tempt the country, which had at first seemed to offer so many difficulties in the way of transportation, contact with the natives, etc., the effort being always to follow the placers up stream until the mother ledge was reached. There are at the present writing on this coast seven distinct "mineral regions" or groups of mines in the course of development, many of which have already reached the point where, after all the heavy expense of installation has been gone through, the owners see before them the prospect of certain remuneration. The regions in question are locally known as follows: Pispis, Tunki, Siuna, Coco (or Wanks), Cuicuinita, Rio Grande, and La Grupera (or "El Mico" region).

LABOR AND WAGES.

It may not be amiss first to say a word as to prices of mining labor and other features of interest to the mining investor in eastern Nicaragua.

The labor employed in the mines of this part of the country is of four classes, viz:

1. Mosquito and other Indians, for making trails, felling timber, and machete work in general.
2. English-speaking coast negroes, or half-breeds, commonly known as "coast creoles," for work under ground.
3. Nicaraguans from the interior, for the same purpose.
4. Foreigners (whites), as section bosses, commissaries, for timbering, and for other skilled labor.

These four classes of labor are all paid in Central American silver (1 peso or "sol" being equal to 38.4 cents in United States currency), and laborers earn, respectively, by the day, by classes 1, 2, 3, and 4, 1 sol (38.4 cents), 1.50 soles (57.6 cents), 1.50 soles, and 5 to 7 soles ($1.92 to $2.69) and food, which must always be furnished them by the mine. One mine owner, who employs a great number of Mosquito Indians, informs me that he has computed the expense of feeding his men, in gangs of over 25, at 0.50 sol (19.2 cents) per diem.

The pay of laborers as quoted above differs materially from the wages usually given in the interior (mines of Chontales, Segovia, and other Departments). As in the interior, laborers are "matriculated"—that is to say, are engaged for a term of months under a sort of "peonage" system, the local military authorities enforcing their fulfillment of the contract with their employer whenever necessary. It is usual to pay them an "advance" upon engaging them—a sum usually less than one-half the first month's wages. Traders who act as labor agents for the mines often vie with each other in offering this inducement.

WATER AND WOOD.

Water power is easily available in eastern Nicaragua, the country being little more than a network of rivers and their tributaries. The climate, although not unhealthy, is rainy almost throughout the year, and there is no fear of sudden drought causing the rivers to run dry, as in so many other subtropical regions.

The country is thickly wooded and excellent timber abounds for purposes both of lumbering and fuel—lignum-vitæ, "palo maria," sapodilla (often called "bullet wood"), red cedar, bastard cedar, "man wood" or palo cortez, and others too numerous to mention.

Below is given a brief idea of the principal mining regions, with the output, etc., of the most important mines. From ten to twenty-five days is the time usually employed in covering the itineraries set down.

TUNKI REGION.

Itinerary.—From Bluefields to Prinzapolka Bar by sea; ascend the Prinzapolka River; enter and ascend Bambano past its first important tributary, the Okumwass, to the point where the river forks into Tunki and Tunkibin.

The chief mines in this region are the Bonanza, the Neptune, and the Atlas.

The Bonanza mine, which is situated on a creek of the Tunki River, has been running for the past three years, with an output which has averaged some $75,000 per year. Since early June the mine has been running with six 3½-foot Huntington mills. J. Lapierre and others are the owners. Mr. Lapierre has been prospecting in this country some years. It was he who first discovered the Concordia mine, elsewhere alluded to, which he sold out for $30,000. With this sum he bought the then undeveloped Bonanza, imported a mill, and has now established a piping plant, which brings water to him across a valley and forces it up the hill on which he is located. He estimates the value of his plant alone at $30,000; the mine itself cost him $10,000 three years ago.

The Neptune is universally regarded as a promising mine. It was formerly the property of the pioneer Julius Schultz and was worked by him for a while. It is now owned by F. A. Pellas, of Granada, and has been working up to ten months ago with a Ball pulverizer, yielding excellent results. It is believed that this mine will later be more systematically developed.

The Atlas was found in 1894 and profitably worked for some time. A five-stamp mill was put in. Development has been temporarily suspended, owing, I am told, to disagreement among the owners.

OKUMWASS REGION.

Not far from here, on the Okumwass River, is the Minnesota mine. This mine is worked with a 3½-foot Huntington mill, and has an output of 30 to 50 ounces of gold per month. The owners are H. A. Maypother, of Jamaica, and Horatio Patterson. For lack of capital the mine is being worked with a plant insufficient to exploit its full resources.

In the same region is Gradis mine, a property of excellent reputation.

PISPIS REGION.

Itinerary.—From Bluefields to Prinzapolka Bar by sea; ascend Prinzapolka River to Bambano; ascend Bambano.

The principal mines here are the Siempre Viva, the Constancia, the Concordia, the San Antonio, the Santo Domingo, and the Lone Star.

Of this region, which is generally regarded as the richest of the entire mining section, the Lone Star mine is the one which within the past year has attracted most widespread attention. Discovered in 1898 by the united effort of two prospectors, Copey and Maltby, it has finally become the property of Messrs. Smith, McInness, and Bluett. In the ten months preceding July, 1903, they had crushed 43,940 tons of ore, equivalent to getting out of the mine $65,910. The work is done at the Lone Star with a 3½-foot sectional Huntington mill, and I am told that they have in construction a twenty-stamp

Allis & Chalmers mill, soon to be put into operation. On April 1, 1903, the mine declared a dividend of $40,000.

The Siempre Viva mine is another of importance. Its output in 1900, 1901, and 1902 was $22,229.22, $31,077.87, and $31,309.31, respectively, and during the first five months of 1903 $34,169.31. The mine is worked by a twenty-stamp Fraser & Chalmers mill. The Siempre Viva Mining Company is organized at Bluefields with S. D. Spellman as president, J. A. Balanger as vice-president, M. J. Clancy as secretary, J. S. Lampton as treasurer, and M. J. Clancy, Joseph W. Beer, and W. D. Ingram as directors.

The Constancia, originally owned by Don Clemente Carlos and a Grand Caiman's man named Crimins, who located it in 1888, was traced up from placers that had long furnished remunerative finds. The ore averaged recently, I was told, about $8 per ton free gold. The mine has recently changed hands and it is expected that the new owners (New York parties) will, with their greater capital, provide more adequate facilities for working. At present most of the work of the Constancia mine has been done on its ledge La Cecilia, and after quite primitive methods. Another ledge, forming part of the same property—the Vesuvius—will, it is expected from experimental workings, prove far superior.

The Concordia mine, discovered in 1895 by P. Rener and R. Lehman, is working two five-stamp mills and averages an output of $5,000 per month.

Other good properties near by are San Antonio and Santo Domingo.

WAWA REGION.

Itinerary.—From Bluefields to Wawa Bar by sea; then ascend Wawa River.

Wawa River for 20 miles up from the seacoast flows through lowlands "fit only for rice growing," once said a New Orleans rice expert, although no rice is grown there. About 40 miles up the pine lands begin on either bank, and there is an abandoned sawmill there. As a mineral district the region has had a remarkable history, although of late years it appears to have ceased to be a favorite field for prospectors. In 1891–92 gold was found about 70 miles above the sawmill, where the foothills begin, by unknown prospectors. In 1892–93 a man named Biebel found an outcropping on a claim called "Coco," and on mere surface work was able to take out between $30,000 and $40,000 of gold. He retired, selling out to persons from South Dakota, who, after working profitably for some time, gave up the claim.

Biebel, meanwhile, in partnership with a Dr. Chester and a Colorado miner named O'Neill, worked a ledge named "Tilba" (Mosquito Indian for "tapir") with some profit. Having bought out his partners, O'Neill continued the work alone, and one day unexpectedly ran across a hilo, as it is called in Spanish (streak), running parallel with the ledge, some 40 feet from the surface and pitching toward the ledge, which it reached at the 70-foot level. His operations were kept secret, but it is estimated by persons who are in a position to know that he finally left the country with a sum not less than $50,000. Since then, however, nothing that I can ascertain has been done in the Wawa Region, though whoever will follow the placer deposits may eventually run across another ledge of like character.

SIUNA REGION.

Itinerary.—Bluefields to Prinzapolka Bar by sea; ascend the river, taking the left-hand fork where it divides into Bambano (on the right) and Prinzapolka or Toongla (on the left); proceed to the town of Wany; thence on muleback five hours to Siuna.

La Luz y Los Angeles is the chief mining enterprise of this region. In January, 1903, it declared a dividend of $21,428.57, of which $6,428 was set aside to form a reserve fund for further expenses. The equipment of the mine consists of two 3½-foot Huntington mills. Its last year's output is given me by the company as 2,915.86 ounces, valued at $49,304.89. Many improvements, among others the use of water power instead of steam, as heretofore, are under way in the installation, and the mine is certainly one of those in the country which should have an assured future.

Other mines of good repute in this region are the Buenaventura, the property of Don José Pizarro, and the Santa Rita, owned by Don Ignacio Osorio. Detailed information about these and figures which were promised had not reached me at the time of concluding this report.

LA GRUPERA (OR EL MICO) REGION.

Itinerary.—From Bluefields by steamboat up the Escondido River past the town of Rama. The first tributary on the right hand is the Siquia and the second the Mico, which gives the region its name.

This mining region is particularly interesting and is perhaps the most widely known of those of the seaboard Departments. The use of the so-called "cyanide process" is being studied by certain mine owners there—notably Mr. Henry Brown, of Bluefields—and it is expected that before many months such mines as this gentleman and his partners control will be equipped with the necessary installation for the use of cyanide of potassium in lieu of the older style "amalgamating process" of separation. A prospector who reached this region in 1892 found it impossible to interest capital in a quartz mine there. J. W. Cutting located the Rebecca ledge at that time, which averaged a free assay of $3 to $20 per ton.

In 1896 William English, a Canadian prospector, discovered what was destined to become one of the principal properties of the coast—the El Mico ledge. This he later turned over to Nathaniel P. Allen, of Rama, and E. Foulkes, of Bluefields. In 1899 these sold out to the firm of Brown & Harris, of Bluefields, who put in a twenty-stamp mill, with concentration plant, and formed the Topaz Mining Company. All in all, they control to-day some 150 working claims in this region. So successfully have the Brown & Harris properties in this region resulted since then that in May last a prominent New York City concern made a bona fide offer of $350,000 for them, only to be met with a refusal.

The Sajina, Dos Amigos, Cecilia, San Francisco, and Siquia are all promising claims, whose output has at various times formed the bulk of the gold exported during the month from Bluefields.

It is at the Cecilia that in all probability Nicaragua will for the first time see the installation of the much-talked-of cyanide process superseding the older methods.

COCO (OR WANKS), RIO GRANDE, AND CUICUINITA REGIONS.

Data promised me as to these have unfortunately not been forthcoming. The work done on the upper reaches of the Coco is principally placer; the same applies to Rio Grande, which has been much less thoroughly prospected.

La Rosalia and the Hermandad are promising quartz mines in Cuicuinita district, both the property of Chinese merchants at Bluefields. The district takes its name from the Cuicuinita River, one of the upper branches of the Prinzapolka.

AMERICAN CONCESSIONNAIRES.

It has been erroneously reported, and it is apparently believed by many in the coast mining regions, that the Nicaraguan Government has "farmed out" to a firm of Pittsburg concessionnaires "all the gold in the country." What is true is simply that James Deitrick and his associates have by concession acquired for twenty-five years certain special rights to locate and claim mines within the Departments of Cape Gracias a Dios (but only from meridian 84° westward), Segovia, and Jinotega. The right is not in any case given them to oust others already in possession—in fact, that was never asked for by the concern—and the concessionnaires in question are operating a field which does not embrace the present gold-producing regions. They have before them, however, immense possibilities in the way of opening up unknown country, of attracting immigration, and especially of cheapening the burdensomely heavy cost of transportation all through the coast section as it now stands.

So there is every reason to believe that with the beginning of the extensive operations of the Deitrick concession along the Coco River, the entire coast will see the opening of a new era of prosperity and the dawn of new commercial possibilities in which every resident of eastern Nicaragua should have a share.

A. L. M. GOTTSCHALK, *Consul.*

SAN JUAN DEL NORTE, NICARAGUA, *August 27, 1903.*

PRODUCTION OF GOLD AND SILVER IN MEXICO.

The Boletin de Estadistica Fiscal for the fiscal year 1901–2, just issued by the Mexican Treasury Department, gives the following statement of Mexico's gold and silver production during the twenty-five fiscal years from 1877–78 to 1901–2, inclusive:

Fiscal year.	Gold production.	Silver production.
1877–78	$746,630	$24,836,903
1878–79	881,301	25,135,264
1879–80	941,958	27,555,627
1880–81	1,012,697	29,234,398
1881–82	936,223	29,239,078
1882–83	955,639	29,568,577
1883–84	1,055,184	31,695,841
1884–85	914,179	33,226,211
1885–86	658,020	34,208,214
1886–87	683,153	37,534,104
1887–88	664,365	39,367,983
1888–89	684,480	41,347,626
1889–90	700,909	39,156,687
1890–91	920,702	41,874,411
1891–92	1,074,637	47,096,156
1892–93	1,269,907	55,245,434
1893–94	1,244,621	58,210,150
1894–95	4,744,542	58,204,085
1895–96	6,085,038	61,003,672
1896–97	6,861,126	63,689,112
1897–98	7,584,182	70,149,606
1898–99	9,346,541	72,498,723
1899–1900	7,823,701	70,218,914
1900–1901	9,327,542	74,326,406
1901–2	9,932,676	72,530,983

The value of the gold is calculated at the rate of $675.416 per kilogram and of the silver at $40.915 per kilogram.

The increase of the gold production was very slow until the year 1894–95, when it received an impulse which raised it from $1,244,621 in 1893–94 to $4,744,542, an increase of $3,499,921 in the twelve months, and to $9,932,676 in 1901–2, an increase of $8,688,055 in eight years.

The silver production increased from $24,836,903 in 1877–78 to $72,530,983 in 1901–2, an effective increase of $47,694,075 in the twenty-five years.

The inevitable inference from these facts is that the depreciation of silver in foreign markets has not prevented the increase in the silver production in Mexico, and has been an impulse to the gold production.

REGULATIONS CONCERNING FOREIGN COMMERCIAL AGENTS.*

(From United States Consul Monaghan, Chemnitz, Germany.)

AUSTRIA-HUNGARY.

Foreign commercial agents, who have in their possession trade licenses issued by the proper authorities of Austria-Hungary, enjoy freedom from taxation. Such agents may carry samples with them, but no salable goods. Samples are free of duty if reexported within a stipulated time and if their identity is satisfactory.

In the solicitation of orders for goods, the following regulations of February 25, 1902, are in force:

The proprietor of a business, or his lawful agent, may solicit orders for only such goods as are common to his trade, and only from such business men as deal in those specific goods. For the solicitation of orders for goods not regularly handled, a special written license enumerating the goods in question is required. In special cases, out of respect for peculiar considerations, the Minister of Commerce is empowered to avoid the effect of the law and permit the solicitation of orders for irregular goods.

In accordance with the administrative ordinances of the Austrian Minister of Commerce of September 4, 1902, orders may be solicited for the following commodities outside of the locality in which the proprietor or agent does his regular business without subjection to the aforenamed restrictions:

1. Heavy machinery, motors, and parts of same.
2. Building material, including stones and other artificial building material, cork, and paving material.
3. Technical supplies, and apparatus for heating, lighting, and waterworks, both public and private.
4. Wooden lattices and blinds.
5. Sewing machines, typewriters, and bicycles.

Sample cases are transported upon the railroads of Austria-Hungary under preferential tariffs, which rates can, however, only be enjoyed under certain conditions and through the observance of prescribed formalities. The rates vary. In some instances they are

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* Based upon "Export-Handbuch," vol. 1, by Dr. August Etienne.

2 hellers (0.4 cent) per 10 kilograms (22 pounds) per 1 kilometer (0.6214 mile), and in others 25 kilograms (55 pounds) are free, with a small charge for excess.

In order to enjoy the benefit of the reduced rates agents must apply to specified authorities located only in certain cities for the issuance of identification cards and licenses on which appear the name of the traveling agent and the firm which he represents, the number and contents of the cases carried with him, the seal and signature of the issuing authority, and the signature of the agent.

The trade license is issued for the period of one calendar year only, and hence expires on the 31st of December of each year. The identification card must, in addition to the seal and signatures of the issuing authorities and the signature of the agent, contain a photograph of the agent in size resembling an ordinary visiting card.

A record is kept of all the licenses and cards issued, and all regulations pertaining to the same are stringently enforced. These papers must be continuously carried on the person of the agent, as the probabilities are that they will be needed again and again. In case of loss, a new license is issued free of cost if proper evidence is at hand that a previous license had really been issued. Every change of person must be reported by the firm and the license and identification card made out to the new representative.

The railroad authorities reserve to themselves the right to inspect the sample cases carried by agents, even though properly issued identification cards and licenses are presented. In case any salable goods are contained in the same, the entire cases are subject to the regular freight and transportation rates, the preferential rates falling away. Salable goods, as well as the personal effects of the agent, must be specially declared and are supplied with special checks.

Sample cases must, if their owner wants to enjoy the benefit of the lower transportation rates, be supplied with the name of the firm under whose direction the journey is undertaken, which name must be placed upon each individual case in a durable and lasting manner. The attachment of a visiting card, or the writing of the firm's name upon a random piece of paper, is insufficient, even though the same be firmly attached. The printing or painting of the firm's name is considered as the surest observance of the regulation. Cases which lack such identification are excluded from the benefit of the reduced rates. It has also been held that cases which are supplied with removable slides of wood or metal, or other durable material containing a lasting record of the firm's name, are acceptable; but in case such labels can be closed care must be taken to have the lids open during journey, so that the firm's name is easily discernible.

The commercial agent is required to accompany his cases on the same train and call for them at the depot within half an hour after the arrival of the samples. In case of his failure to do so, he is required to pay the difference between the reduced rates and the regular rates. Not the agent, but the firm, is liable for a violation of the railroad regulations concerning the transportation of sample cases. A common penalty for a violation is the rejection of the privilege of preferential rates in the future.

In Hungary entry of samples can be made free of duty, with the exception of all combustibles and tobacco. Goods are also free of duty if their weight is less than 25 grams or the duty upon the same is less than 2 kreutzers (0.4 cent). This is construed to mean that all the individual packages of the same kind of goods entered at one and the same time do not exceed the weight of 25 grams or the duty of 0.4 cent. This regulation is also in force to cover goods sent into Hungary through the post.

FRANCE.

Traveling agents who carry no goods for sale, but only samples, enjoy freedom from all taxes in France. A proper business indentification card issued by the competent authorities of the agent's country is sufficient. He is, however, limited in his activity to business transactions with those firms which deal in his specific goods. The samples entered are exempt from duty if reexported within one year from date of entry. The regular duty must, however, be deposited with the custom-house officials or proper bonds given for the amount. If the goods upon entry already bear the stamp of the customs authorities of the agent's country, a second attachment of identity signed by the French authorities is unnecessary.

Traveling agents who carry goods for sale are classified with peddlers or hawkers in France; no special trade license is required, and they cease to be traveling agents in the eyes of French commercial law. As peddlers they must, however, apply for a trade license, which is made out anew at the seat of government in every Department visited by the agent. The business tax in such a case varies in a somewhat peculiar way, according to the method of the transportation of the goods. As a rule, the tax is about 8 francs ($1.55) per year. Aside from this a fee of about the same amount may be exacted by the local authorities who issue the trade license. A renewal of this latter fee is not required on the removal of the agent to some other part of the country, although the license must be produced to the local authorities of each community entered by the agent.

Samples sent into the country or any other dutiable articles transported into France through the mails are either delivered to the addressee upon payment of the duty or are held by the postal authorities pending the payment of the duty by the sender.

GREECE.

Traveling agents who properly identify themselves by business passports are exempt from taxation. Dutiable samples must be declared to the customs officials, whereupon they are supplied with Government seals and distinguishing labels. The duty on the same must be paid or proper security given therefor. The duty is refunded or the surety relieved if within three months the samples are reexported. The three months' limit may in certain cases be extended to a full year. Such extension can, however, only be granted by the customs authorities of the place where entry was made. For this reason, as well as for other considerations, it is reported that experience has shown an extension of the time limit to be associated with many inconveniences and formalities which make it advisable for traveling agents to so arrange their tours as to complete their work within the time prescribed. Samples which after regular entry are transported to some other city than that in which entry was made are not subject to any further tariff formalities, but must be accompanied by a "declaration de transport" issued by a competent customs official at the original port of entry. This declaration covers the transportation of the samples to any part of Greece.

GREAT BRITAIN.

Commercial agents who travel in the British Isles are exempt from all taxes and special trade licenses or concessions, except in case of those commodities for the sale of which special public license is requisite. In the latter case foreign agents are subject to the regular trade regulations governing the sale of excise commodities, which have been established as follows:

For trade in—	
Liquors, alcoholic	$51.09
Wines	51.09
Beer	16.08
Patent medicines (*i. e.*, medicines not prescribed by a regular doctor)	1.22
Tobacco	1.28
Silverware (as determined by the proportion of gold and silver contained therein)	$11.19 to 27.98

In distinction from most other countries, samples and salable goods may be carried and business done with same by commercial agents without special authorization, passport, or certificate. But in case of those commodities for the sale of which special trade licenses are necessary, the production of such licenses upon request is made obligatory upon foreign agents in the same manner as upon citizens of the country.

Where samples are dutiable, such duty must be deposited, but refundment is made if the same are reexported within one year from the date of their entry. In securing the identity of the goods it is necessary in this connection to observe the requirements of the English law on trade-marks, under which certain commodities may not be handled under any trade-mark at all and others not without one.

The following regulations hold good at present for the importation of samples of commodities drawn from foreign soil and transported directly to some English commercial agent, retailer, or consumer:

1. Samples of tea are free of duty if their weight does not exceeed 1 ounce.

2. Samples of cocoa and coffee are exempt from duty in quantities of less than half a pound.

3. Samples of unmanufactured tobacco weighing less than 6 ounces are free of duty and may be imported per "sample post," or as samples without value.

ITALY.

Commercial agents traveling in Italy are exempt from all taxes or fees if provided with the prescribed trade licenses, which properly identify themselves, show whom they represent, and the nature of their business. The regulations concerning dutiable samples are very similar to those already described for other countries—namely, that the amount of the duty must either be paid in cash or proper security given for the same, and that upon the reexportation of the samples, proper proof being furnished of their identity, such duty is refunded or the surety relieved.

The importation and exportation of samples may be executed at any port of entry of the first grade, as well as at any one of the first class in the second grade. When the agent does not accompany his samples personally, a written entry must be made, otherwise his verbal statements are accepted. Samples must, wherever possible, be supplied with identifying labels, or where the attachment of identifications is impossible a thorough description of their character must be entered at the custom-house. No fee may be exacted for the attachment of labels and stamps, except in case of certain textiles which are difficult of proper description and identification. In order to avail of the privilege of the refundment of the duty all samples must be reexported within one year from the date of their entry. Such reexportation may be made through a custom-house other than that of their entry. The customs declarations as to the identity of the samples reexported may be made verbally.

"Samples without value" which represent a part of a commodity are free of duty. This includes all samples of paper and tapestry up to that size which is requisite to illustrate the entire design or pattern of the stuff. Samples of porcelain wares constituted of parts comprising varying patterns are also exempt from duty if the shipper is able to show that the component parts as sent are useless for any other purpose than that for which they were expressly made.

A matter that also requires mention here is the existence of severe and stringently enforced regulations governing the use of the mails in sending valuable commodities of small dimensions into Italy. Years ago the Government package post was much abused by the sending of silver and gold valuables through the same for the evident purpose of evading the duty. The general form of sending was by registered letter or as "sample without value." This illegal practice assumed such dimensions that special surety companies were organized, having for their purpose the guaranteeing of the safe delivery of the valuables on payment of a premium. To overcome these extensive customs evasions new regulations were put in force under which the postal authorities were to cooperate with the tariff authorities by opening suspicious packages and returning all that contained dutiable commodities to the sender. This revealed such widespread violations of the Italian customs law, and imposed such heavy duties upon the returning authorities, that more stringent measures became necessary. At present, therefore, every suspicious package or registered letter is opened, and if the contents are dutiable articles the recipient, or addressee, is required to pay thrice the regular duty, as well as a heavy fine in money. Since such expenses are generally charged to the sender, legal complications have been a frequent consequence of the operation of the new regulations. It is therefore advisable that commercial agents and others bear in mind the severe administration of the postal laws in making communications of this kind with Italy.

NETHERLANDS.

In the Netherlands foreign commercial agents are required to apply for a trade license at the first custom-house which they reach. These licenses (billet von de bedryfsbelasting) are issued on payment of a fee of 15 gulden ($6.03). In case samples are carried a transit passport must be applied for, in which all samples are entered after being supplied with proper labels. In addition to this 25 per cent of their market value must be deposited as a guaranty for their reexportation. If any samples, or parts of any samples, are sold or missing the full duty upon the entire lot must be paid. If the agent desires to leave the country through some port of entry other than that specified in his transit passport, application must be made to the authorities of the original port of entry for a transfer of his entry record to the port from which he expects to sail or leave. These passports are issued free of cost and, in accordance with the wishes of the traveling agent, for a period of three, six, or twelve months.

Where entry is made of samples which are unaccompanied by the agent, the following regulations are in operation:

1. Small samples of no value in trade, such as patterns of manufactured goods which are not adapted for any other commercial use, patterns of tapestry, cigar labels, etc., all of which are without value to the consumer, are admitted free of duty.

2. Samples of wines and whiskies imported in quantities of less than three-tenths of a liter are also free. It does not matter if the total contents of the bottles aggregate a considerable quantity, as 150 liters (153 gallons).

3. Samples of articles like sugar weighing less than 15 decagrams (5.29 ounces) are free of duty, if there exists no reason for believing that it is the intention of the importer to use the same for any commercial purpose.

NORWAY.

In Norway all foreign traveling agents are required to apply for a trade license, which is issued upon the payment of a fee of 100 crowns ($26.80) and is good for the period of thirty days. Commercial agents are under the direct control of the police, and are under obligations to produce their licenses in every town in which business is done for the purpose of having them visaed. No fee is due for this official act.

Violations of these regulations are punishable with a fine of from $26.80 to $134.

In accordance with the law of May 4, 1902, traveling agents and foreigners in general are required to apply for a so-called "sojourner's passport" at the police department. Lately, however, a further rule was added that in case of traveling agents who have received a proper certification from the police on the front page of their trade licenses to the effect that their arrival has been duly reported to the police department and entered in the police register for foreigners no special "sojourner's passport" is required.

But this latter regulation does not affect the other provisions of the law of May 4, 1902, bearing upon commercial agents, under which they are bound to report personally to the police for the inspection of their papers in regard to means of existence, prospects of future sustenance, etc.

When samples are carried the duty upon the same must be deposited. On their reexportation the amount deposited is refunded, provided a declaration was made at the time of the entry of the samples to the effect that their reexportation would follow, and if the identity of the samples is satisfactorily established. The Norwegian customs authorities supply samples with distinguishing labels, as far as this is possible.

J. F. MONAGHAN, *Consul.*

CHEMNITZ, GERMANY, *August 27 and September 10, 1903.*

AGRICULTURAL IMPLEMENTS AND VEHICLES IN FOREIGN COUNTRIES.

DENMARK.*

(From United States Consul Frazier, Copenhagen, Denmark.)

HAND LABOR VS. MACHINERY.

The demand for labor-saving farm machinery is affected very little by the cost of labor. A farm laborer receives 200 kroner ($54) by the year, and by the day in harvest time he receives only 2 kroner (54 cents). But while the laborer receives much less for his time in Denmark than in the United States, the cost to the farmer, when measured by the more correct standard of the amount of work accomplished, is quite as great here as in any portion of the United States.

AGRICULTURAL IMPLEMENTS IN USE.

Practically every vehicle used in Denmark is of domestic manufacture, but all farm machinery is imported.

Denmark is a splendid field for the American vehicle manufacturer who will study the situation seriously, enter the field earnestly, and work in it patiently.

In farm machinery and implements the United States is in the lead, although it does not monopolize the trade.

Denmark is strictly an agricultural country. There is now, and there always will be, a demand for farm machinery. The demand is at present supplied very largely by American manufacturers. It would seem, from a careful study of the situation, that the various Danish firms who represent our manufacturers of farm machinery are doing all that can possibly be done to advance our interests. It is well to remember, however, that European manufacturers, especially the Germans, are quick to copy and eager to promote their own trade. Even now representatives of American firms find it necessary, in dealing with the farmers, to consume much time and energy in arguing in favor of quality as against cheapness in price. Our most popular implements, especially the lighter articles, are copied, cheaper materials are used in manufacture, and great inducements in prices and in time payments are offered. These statements do not apply to harvesting machinery. Dealers, however, have preferred American makes and have been willing to meet the rigid terms of the American manufacturer. Just how long this condition will last it is difficult to say, but it is safe to predict that so long as the United States occupies the leading position she now holds in the manufacture of farm implements she will be favored by the dealers and consumers in Denmark.

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*This report and the following reports from British India, Honduras, and Austria were received too late for insertion in Vol. XXVII of Special Consular Reports "Markets for Agricultural Implements and Vehicles in Foreign Countries."

In single plows (as distinguished from the gang plow), disks, potato planters and diggers, cultivators, reapers, mowers, self-binders, hayrakes (tedders are not favored), and in the smaller implements, such as hand cultivators, spades, shovels, etc., American manufacturers have the lead, and in harvesting machinery may be said to have the field.

In gang plows, spring-toothed harrows, seeders and drills, thrashing machines, and traction engines there is successful competition. In single plows, also, there is a domestic make which is very popular, although the materials used in its manufacture are largely imported from the United States.

A German gang plow is greatly favored. It has been thoroughly tried and is well and favorably known.

A double plow (German) sells (catalogue price) at 85 kroner ($22.78) and a triple plow (catalogue price) at 120 kroner ($32.16).

In drills and seeders the United States can not compete in prices with home manufacturers.

In spring-toothed harrows the Swedish makes are popular, owing largely to prices; the American harrows are more durable. In thrashing machines England supplies the demand.

In traction engines the United States is a strong competitor in the market with England, the sales being about two to three in favor of England.

BINDER TWINE.

In binder twine Germany, England, and the United States supply the demand, but Germany leads. The twine from Germany and Scotland retail at 42 and 50 øre (11¼ and 13½ cents), respectively. To sell well in this market binder twine should be retailed at not over 50 øre (13½ cents) per Danish pound, which is equal to 1.1 pound, but no American twine yet imported can be retailed at that figure.

CATERING TO THE SMALL FARMERS.

The demand for all kinds of farm machinery and implements will steadily increase. At present the consumers consist, principally, of estate owners, some 2,200, and about 75,000 farmers, the latter owning from 5 to 80 acres of land each.

A very important class, consisting of 100,000 small freeholders, is likely to be neglected, if not entirely ignored, by our large and impatient manufacturing concerns.

The Danish Government displays great interest in her agriculturists, and especially in the struggling ones. The Government is doing much to encourage land ownership. In order to induce men without means to make a beginning, the Government offers to advance nearly the entire value of a property, taking a mortgage as security and giving most reasonable terms of interest and principal payments. As a result of this liberal policy, there are few men outside the cities who have not some interest in tillable land. By a system of high schools, corresponding to our farmers' institutes, these men are being educated and in every way encouraged. The manufacturing firm which caters to their needs will surely enter a profitable field. The particular article most needed by this class just now is a small-sized single-horse plow, with reversible shares and slip, patterned after the most approved larger-sized plows in use by the larger landowners—such, for instance, as the "Oliver" or the "Bissell." It should be of precisely the same style and make as the larger plows in use here.

GOVERNMENT TESTS OF FARM IMPLEMENTS.

The interest taken by the Danish Government in all agricultural subjects is well illustrated by the way the Government deals with the question of farm machinery. Doubtless one reason for the advantage which American manufacturers enjoy in Denmark lies in the fact that the Danish Government assumes the position of expert counsel for the Danish farmer who contemplates the purchase of farm implements. The Royal Danish Agricultural Society supports a bureau whose business it is to advise farmers concerning the most approved makes of farm implements. The head of this bureau is known as "Statskonsulent for Redskaber and Maskiner" (State expert or counselor for implements and machinery). His salary is paid and the bureau is supported by the Government. The Government allows an annual appropriation with which to conduct trials of farm machinery. The verdict of one of these trials is widely advertised through the weekly newspapers, the agricultural magazines, by private correspondence, etc., for the benefit of the consumer.

In a letter to this office the Government expert on agricultural machinery, C. V. Birk, thus defines his duties:

1. As far as possible to keep informed on the great and significant advances made in machinery and implements.
2. To bring these advances to public knowledge.
3. To answer questions, either from the private or public side, which may be directed to me on the subject. * * *
4. Where an opportunity is afforded to undertake trials of machinery where I am convinced that these trials may have a significance to their correct valuation, as well among the farmers as among the manufacturers, and at the same time to call attention to the changes and improvements which appear to be desirable and necessary.
5. To make an annual report covering my labors and the new things of significance in machinery and implements which may have been brought forth during the year.

The trials, it need hardly be said, are impartial; that they are important from the standpoint of the dealer is evident from the fact that dealers in agricultural implements seem eager, when a trial results favorably for an article which they have for sale, to advertise the fact widely. American manufacturers, if advised by their customers in Denmark to heed the recommendations of the machinery expert, will do well to heed, even though they may not agree as to the practicability of the change recommended.

ROADS, ANIMALS, AND VEHICLES.

Denmark furnishes a good field for the American manufacturer of vehicles who enters the market in earnest. The Danish consumer of vehicles is ultraconservative. He has been accustomed to one style of vehicle for years. A radical departure from the approved style will not be tolerated, and there is no use in attempting to win the Dane over to it. The vehicle brought into this market must have three distinct qualities: (1) It must be practical; (2) it must be substantially built; (3) it must have a familiar look.

The work of establishing a trade will be slow. The market can not be taken by storm. There is but one sure way to gain a foothold and that is to conform to the particular demands of the Danish market and, after adopting a style calculated to please the consumer, send a consignment of vehicles here, intrust the business to reliable firms, and give them time to work the market. The vehicles will advertise themselves. The money which would be otherwise appropriated in the United States for enlarging trade in Denmark should be spent in warehouse rent and insurance.

Many, though not all, kinds of vehicles can be sold in this market. Some of the styles most popular in the United States are practically unknown here. It is doubtful if there are four "top buggies" in the Kingdom. A rubber-tire top buggy in Copenhagen is looked upon with much curiosity, but is not taken seriously. In the cities pleasure driving is practically unknown, except the lines be in the hands of the coachman or the cabman. The farmer does not find the single-seat covered carriage or the "runabout" capable of carrying the whole family, and the Danish farmer will not invest in more than one pleasure vehicle. In the cities a family of five may ride for 54 cents per hour in a cab, and the man who possesses a horse and vehicle of his own is very rare. In the country, where the farmer owns his own horses, the pleasure vehicle must be capable of carrying at least six persons.

There are, it is true, a few of the lighter vehicles in use in Denmark, but they are, for the most part, two-wheeled vehicles, either the dogcart type or unpretentious traps for four. These are not sufficiently common, however, to warrant further notice here.

Denmark, therefore, offers a market for (1) the heavier city wagons and trucks, (2) road wagons and farm trucks, (3) delivery wagons for city use, (4) the pleasure wagon for country use, and (5) the finer turn-outs used by the wealthier classes.

As to the heavier wagons for city and country use, the fellies and spokes must be oak, from young trees cut during the winter season when the sap is in the ground. Owing to the extremely moist climate which prevails in Denmark, this is said to be a most important rule to follow.

In the lighter vehicles, where greater care is naturally taken to keep them well painted, the fellies and spokes may be of hickory.

Careful observation of the vehicles in use in this country suggests the following general classes of horse-drawn vehicles employed: (1) The workingman's vehicle, (2) the farmer's pleasure vehicle, (3) the the strictly high-class pleasure vehicle, and (4) the cab.

The same general style is followed in the building of all vehicles in any given class. Practically the only difference in the very light delivery wagon and the 6-ton wagon is the difference in size, in the width of tires, and in the number of springs used.

Two sets of springs, one set in front and one back, are used on all horse wagons, whether they be for the delivery of groceries or milk, hauling brick or coal, or pleasure vehicles.

The front wheels of every vehicle built for this market must of necessity "cut under."

Every vehicle for this market must be strongly built to withstand the constant jolting caused by the cobblestone pavements and macadam roads; for the same reason the wheels of farm trucks should be of wood in preference to steel.

Tires of the victoria and coupé cabs, light delivery wagons, pleasure wagons for the country, etc., should be 2 inches wide; on the 2-ton wagons, 3 inches; and on the 4 and 5 ton wagons, 4 and 4½ inches wide.

Cabs are all of one general style, but the trade is not a satisfactory one to cater to.

There are thousands of handcarts and apparently there are no two alike. Each purchaser prefers to be his own designer. This is suggestive of difficulties for the manufacturer located across the ocean.

DEALERS.

Some of the leading dealers in Copenhagen are:

Brodr. Bendix.
W. Langreuters Eftf.
H. C. Petersen & Co.
F. Portefee Bahnsen & Co.
N. Nissen.
Ole Sorensen & Co.
Amerikansk Maskin Import.

N. Larsens Vognfabrikker, No. 52 Smallegade, Copenhagen, are the principal general manufacturers and dealers in Denmark. They make all sorts of vehicles, from handcarts to street cars. This firm, as well as some of the farm-implement houses, are willing to cooperate with the American manufacturer who will recognize existing conditions before entering the market.

DUTIES.

It is optional with the importer whether he pay 10 per cent ad valorem or 2 kroner (54 cents) per 110 pounds avoirdupois.

Wagons, to be drawn by horses, wholly or half covered; Galesche wagons, with fast or loose Galesche, 60 kroner ($16.08) each; others, 24 kroner ($6.43); tipcarts, handcarts, baby carriages, etc., 6¼ øre (1.7 cents) per Danish pound (1.1 pounds avoirdupois).

RAYMOND R. FRAZIER, *Consul.*

COPENHAGEN, DENMARK, *September 16, 1903.*

BRITISH INDIA.

(From United States Consul Fee, Bombay, British India.)

AGRICULTURAL CONDITIONS.

The Peninsula of India, which in area is about one-half the size of the United States, has a population of nearly 300,000,000, about 200,000,000 of whom depend, directly or indirectly, for a livelihood on agricultural employment.

The area of the holdings is on an average exceedingly small, seldom more than a few acres and often mere gardens. Of course there are some exceptions, Zemindars and a favored few having larger holdings.

The holdings are held by different kind of tenures, generally leasehold; seldom in fee simple. The fee being, as is the case in the presidency of Bombay, in the Government, the tenant is not permitted to alienate or encumber his title.

The farmer of India, or "ryot," as he is called, is in utter darkness as regards education, and is poor and underfed. He is industrious and, under the circumstances, outside of famine years gets good returns from the soil. He lacks ambition or desire to improve his material condition or methods of labor. He cuts his crops according to the signs of the moon or the custom practiced by his forefathers. Oftentimes the grain is overripe, and grass or fodder has lost its nutriment and turned to straw on the stock before it is harvested. The system of timely cutting and curing grass and fodder is quite unknown to him.

He has little knowledge of green manures. Much of the excrement of the bullocks is used for smearing walls and ground floors of their houses and for making cakes for fuel.

Life in the villages has been modified but little since the most ancient times. All ryots, or farmers, live in villages and to it one must go to understand the life of the Hindoo.

HAND LABOR VS. MACHINERY.

Farm labor is plentiful and cheap, and is paid from 2 to 4 annas (4 to 8 cents) per day. The farm is so small and the ryot so poor—taxes and famine years claiming all his savings—that he is generally in debt to the money lender for marriage ceremonies for his children or memorial celebrations to his ancestors.

AGRICULTURAL IMPLEMENTS IN USE.

The agricultural implements used by the ryot are of the most primitive and ancient patterns. Hand sickles are universally used to cut the crops; grain cradles are never and scythes seldom seen in India.

The grain is thrashed by pounding with a club or tramping by cattle, and winnowed by being tossed in the air so that the wind may blow out the chaff.

With a few exceptions in large cities, the grinding of grain is done by women on hand mills, after the manner shown in Biblical pictures of the time of Abraham.

The plow consists of an upright piece, made from a curved limb of a babul tree, with an iron point, having mortised into it a beam lengthening into a tongue, and which is tied by a rope on the yoke of the oxen. The plow is made by the village carpenter, at a cost of 3 or 4 rupees ($1 or $1.30). The plow is drawn by one or two yoke of oxen, and it simply stirs the ground. The monsoon rains do the rest.

Water is drawn from wells for irrigation purposes by bullocks pulling down an incline. The water is raised in leather bags, connected to the ox yoke by a rope running over a pulley.

An implement universally in use on the farm and generally for all sorts of digging, scraping, and raising of dirt is the "pharwa." It is somewhat similar to the hoe; the blade, however, is broader, thicker, and deeper. It is hammered out by the village blacksmith, and has a short, straight handle.

If earth is to be moved any distance it is dug up by the pharwa and scraped into a shallow, round, bamboo basket, which is then placed on the head of a cooly "woman," who carries it to place or dumps it into a bullock cart.

Spades are not in use because the native, being barefooted, can not press it into the ground. Shovels, which require more strength to shove them, than to pull the pharwa, are likewise never used by the native.

HOW TO INCREASE AMERICAN TRADE.

Under the foregoing conditions we can not expect to sell in India mowers, reapers, binders, steam separators, gang plows, and such agricultural machinery as prove of great value on an American 1,000-acre farm.

There is, however, no doubt but that there is a considerable opening for hand machinery, farming implements, and other labor-saving devices, such as hand fanning mills, cheap plows, ox yokes, dump carts, horsepowers, feed or fodder cutters, small thrashing machines, carriages, cultivators, cane mills, oil engines, belting, iron hand pumps, brick machinery, grindstones, sickles, windmills, pumps and towers, carpenters' tools, safes, hardware, electrical supplies, and cotton machinery.

ROADS, ANIMALS, AND VEHICLES.

The main highways and city streets are well made, usually of macadam, thoroughly drained, and rolled by heavy steam rollers imported from England. Famine labor has been utilized in their making. India, being tropical, is never disturbed by the upheaval process of frosts and ice.

The vehicle of transportation is the bullock cart. It is native made, simple, heavy, and clumsy. The tongue is mortised into the axle, and upon this T the rack or box is permanently fastened. The end of the tongue is bound stiffly to the ox yoke. The latter is a simple, round piece of timber 3 or 4 inches thick and about 4 feet long. It rests on the neck of the bullock, wooden or iron pins being run through its ends to keep it from slipping off the neck of the animal. The load on the cart is balanced so that the yoke is held down, and a rope around the neck of the ox takes the place of an oxbow and keeps the cart from tipping backward. The cart is dumped by simply unfastening the rope around the neck of the oxen.

The oxen, being of the high-hump, sacred variety, are peculiarly fitted for this barbarous yoke, which conveys every motion and jolt of the cart to the neck of the oxen. A Yankee ox yoke would be a blessing to these dumb brutes, and at the same time it would increase their efficiency. These ox carts, or "bail-ghari," are universally used in the cities as well as in the country for all kinds of draying and hauling grain, hay, dirt, brick, stone, bales of cotton, steel constructional beams, or teak-wood logs 40 feet in length; everything and anything is carried upon them.

The native "reckla," or covered two-wheeled cart, drawn by trotting oxen, is much in use in the cities for the transportation of natives.

In the cities a "victoria," or "ticca-ghari," drawn by one horse, is generally used by the Europeans and better class of natives as a hired street conveyance. It is native made, the springs, axles, and, perhaps, some other parts being imported from England. In Bombay it is fitted with rubber tires and forms a convenient and cheap mode of street conveyance.

In the country and interior towns the conveyance for Europeans is the "tonga," a two-wheeled cart with a seat facing the rear for two persons, who ride with back to the driver. They are drawn by two small native horses, with a kind of yoke fastened on the back or neck. The European in India generally supplies himself with a fine victoria imported from England. It is drawn by a span of Persian or Australian horses

DEALERS.

The New York Export and Import Company, of New York City, have a thriving branch house in Bombay, on Hummum street. They import and deal in all kinds of machinery, shelf hardware, bicycles, automobiles, carriages—in fact, they import any American goods or products that the market demands.

Dossabhoy Merwanjee & Co., Parsee Bazaar street, Fort, Bombay, are American agents of many years' standing, and also import any goods or merchandise for which they can secure indent orders.

Muller, Maclean & Co. (successors to Wilhelmi & Co.) are exporters and importers. Their head office is No. 116 Broad street, New York; they are represented in Bombay by Purshotum Vishram & Co., Medows street.

Macbeth Bros. & Co., Apollo street, Bombay, are engineers and machinery merchants. They are now agents for certain American engines and agricultural machinery.

Martin Cohen & Co., 9 Marine street, Bombay, is an American firm, and manufacturers' and merchants' agents.

Messrs. Tata & Co., merchants and commission agents, Parsee Bazaar street, Bombay, have a branch agency in New York City.

There are a number of concerns in Bombay that will freely import from the United States, provided the indent orders are given them, but take no trouble or initiative to sell American goods.

WM. THOS. FEE, *Consul.*

BOMBAY, INDIA, *July 17, 1903.*

URUGUAY.

(From United States Consul Hopley, Montevideo, Uruguay.)

HAND LABOR VS. MACHINERY.

Although agricultural labor is very cheap, $7 to $8 per month—occasionally $10 to $12—with board, which costs the employer very little, machinery in nearly all work is cheaper.

IMPLEMENTS IN USE.

In preparing the soil agricultural implements of modern forms are practically universal. The planting is done mostly by women and children or by hired labor, when this can be obtained; for while this labor is cheap it is scarce, the laborers being Italians and peons. Very few cultivators are as yet in use, the almost universal idea being to plant the corn and leave nature to do the rest. In harvesting or gathering the crops implements and machines are practically universal. The plows, harvesters, and binders are almost all manufactured in the United States; the thrashers come from England.

AMERICAN IMPLEMENTS AND VEHICLES.

American agricultural implements are sold in this district, the importation of these implements at this port alone amounting to over $1,000,000 annually. The only American vehicles used here are the road wagons (buggies). Practically no foreign vehicles are used excepting cabs, which come from France. The American road wagon (buggy) is sold in very fair quantities. The American manufactures sold here are popular. It is to the credit of the exporter that they are of the best make and do not disappoint the buyer.

HOW TO INCREASE AMERICAN TRADE.

As to the increase of trade, it must depend on increased farming acreage and increased population in the farming region. The increase in population is very slight, if any. There is a slight increase annually in the farming acreage. Uruguay is mainly devoted to cattle raising and is dotted all over with large estancias. The smaller estancias are finding the cost per head of producing cattle too great to compete with the larger ones, so many are finding it more profitable to engage in farming. This increase in farming acreage will naturally demand an increase of farming machinery. In plows, harvesters and binders, binding twine, and road wagons (buggies) the United States has the market to-day, the importations of the first three articles being heavy.

This is not a new field, and an entrance thereinto beyond that already occupied by the United States can only be made by some one directly interested in pushing American goods. The firms here are European, interested in European goods. I do not say that some might not change from European to American goods (the custom-house statistics show that among the imports from Germany are American agricultural implements), but I do say it could be better done by American houses combining and having good men here—men who can speak Spanish and who are here to sell American goods, and not to make a sale whether it be European or American. We are somewhat handicapped by lack of such communication between the United States and Uruguay as exists between Europe and the United States. Supplies can be ordered from Europe, knowing to a practical certainty when they will arrive; there is no such certainty as to the arrival of goods ordered from the United States.

ROADS, ANIMALS, AND VEHICLES.

The roads of the country are unimproved and are as nature makes them; after rains they cut in with deep ruts, and nothing is done in the way of repairs. In the city, however, the streets are of bowlders (after the style of granite blocks, but with rounded tops). The streets are all good, and all needed on them are vehicles with rubber tires for pleasure riding. In the country road-making machines are needed. Horses here are good, but they are only used for driving. The vehicle used in both city and country is a large, unwieldy, two-wheeled cart, the wheels being 5½ to 6 feet in diameter. Those in the city are drawn by mules; in the country, by oxen, and they haul very heavy loads.

DEALERS.

Bell, Towers & Co., Montevideo, have been handling American machinery for many years. Juan Shaw & Co., Montevideo, are also handling American machinery. Both firms do a large business, are responsible, and would accept other profitable business.

JOHN E. HOPLEY, *Consul.*

MONTEVIDEO, URUGUAY, *September 1, 1903.*

HONDURAS.

(*From United States Consul Moe, Tegucigalpa, Honduras.*)

HAND LABOR VS. MACHINERY.

Hand labor in Honduras is cheap. Some years back, however, such labor was much cheaper; but the influx of foreigners, especially Americans, has created a new scale of wages far in advance of that of former times. Mine labor averages about 60 cents gold per day, but farm labor is as low as 12 cents gold. On banana plantations wages are about the same as in the mines, but the laborers must "find" themselves. On the coffee plantations they are provided with food and shelter. It would therefore seem that the cost of hand labor is not sufficiently great to justify the use of labor-saving machinery by the agricultural interests in this district. Very little manufacturing is carried on here, the making of aguardiente (a spirituous liquor made from the sugar cane) and soap and candles being the most important. All manufactories have Government concessions, in the nature of a monopoly, for which a yearly rental is paid.

IMPLEMENTS IN USE.

Modern agricultural implements are not used in this district (which is chiefly given over to mining), nor, for that matter, in most parts of this Republic. Agriculture is not conducted on a scale requiring the employment of machinery, nor would the returns from indifferent crops justify the purchase of such machinery or implements.

AMERICAN IMPLEMENTS.

The only implement I have seen in very general use in Honduras is the machete, and the Collins machete is the most used and most sought for.

Such vehicles and wagons as I have seen in this district are nearly all American, but the selling prices are almost prohibitive.

HOW TO INCREASE AMERICAN TRADE.

The most effective means for bringing machinery and implements, as well as all other manufactures, to the attention of the people of Honduras is the establishment here of a depot or store for their sale. The sending of advertisements and catalogues avails nothing.

The only American machine that is popular in Honduras is the sewing machine, which is in practical use throughout the Republic.

The buyers of this district, as well as throughout Honduras, are fully aware of the good properties of most American-made goods and are ready to buy for cash. The great percentage of goods sold here is on a cash basis, and the long cry that from six to twelve months' credit must be given really should have no foundation. Foreign tradesmen sell their stock many times over before they are required to satisfy their credit. To gain the Central American market we must either sell cheap to these tradesmen, who in turn sell very dear, and give them their excessive credit, or we must establish depots and stores of our own, run by Americans, at American rate of enterprise, on a fair scale of profit. The latter scheme seems to me the more likely to gain for us a permanent market, not only in this district and in this Republic, but beyond in either direction.

ROADS, ANIMALS, AND VEHICLES.

There is but one road suitable for the use of American styles of vehicles for pleasure or freight. This road extends from Tega to La Venta, about 50 miles, or half way to the Pacific coast. It is proposed to complete this road to the sea, but internal disturbance has postponed the work since January last. All other roads (so called) are mere trails over the mountains. They are just wide enough to admit the passage of a mule. These trails are not much better than those which Cortes found when he discovered Honduras. There is no doubt, however, that with the completion of the South Road, which is a broad highway, excellently laid and equal to any road in the United States, great impetus will be given to freighting from the Pacific into the interior of Honduras by way of Tegucigalpa, the central terminus of the road.

Draft animals in Honduras are mules, asses, oxen, and horses. These animals are all of a diminutive type and serve very well for the carrying of freight, but for the purpose of hauling our styles of carriages and wagons these little beasts would scarcely do; and yet it must be said that they carry packs of 200 pounds over the mountain trails and through roaring streams.

DEALERS.

Santo Soto, Pablo Uhler, Policarpo Bonilla, and Daniel Fortin, all of Tegucigalpa, are the merchants most likely to handle American-made goods. The Germans are naturally partial to the products of their own country, on which they can obtain long credit and sell at a profit of 200 to 300 per cent.

DUTIES.

The tariff is levied on gross weight and the rate given is for each half kilogram (about 1.1 pounds). One centavo is equal to four-tenths of 1 cent in United States currency at the present exchange.

Wagon and carriage axles, carts, dump carts, engines, gasoline engines and pumps, locomotives, road machines, brick machines, thrashing machines, rollers, road graders, vehicles, farm wagons, windmills, windmill towers, spring wagons, freight wagons, windmill pumps, wheels, road wagons, dump wagons; delivery, express, and lumber wagons; mountain wagons, and wheelbarrows are dutiable at the rate of 1 centavo (0.4 cent) for each half kilogram of weight; buggies, wood and iron pumps, phaetons, wheel and walking plows, gang and sulky plows, chilled plows, force pumps, surreys, and carriage wheels, each half kilogram at 2 centavos (0.8 cent); agricultural and farm implements, corn huskers, corn shredders, corn cleaners, cornshellers, grinding mills, steel mills, sawmills, cane mills, shovels, spades, scoops, wagon and carriage springs, sickles, wagon gears, and platform springs, each half kilogram, 5 centavos (2 cents); brass goods, harness, and scales each 2 centavos per half kilogram; leather belting and umbrellas, for each half kilogram, 25 centavos (10 cents).

ALFRED K. MOE, *Consul.*

TEGUCIGALPA, HONDURAS, *September 17, 1903.*

AUSTRIA.

(From United States Commercial Agent Harris, Eibenstock, Germany.)

ELECTRIC PLOWS.

The Oesterreichische Schuckert Electric Company, in Vienna, has been experimenting of late with electricity in its application to agricultural machinery. This is the first time that such attempts have been made in Austria. I would request anyone in the United States interested either in the theory or practice of the use of electricity along these lines to apply for full information to the above-named company.

ERNEST L. HARRIS,
Commercial Agent.

EIBENSTOCK, GERMANY, *September 7, 1903.*

NOTES.

American Stoves in Brazil.—It is interesting to note a steady gain in the importation of light American cooking stoves into this section of Brazil, and I believe the call for these goods will steadily increase as they become better known. The field here for such articles is very large.—*K. K. Kenneday, Consul, Para, Brazil, September 9, 1903.*

Artesian Wells in Brazil.—Well boring with American machinery is becoming quite general in this country. Much of this work is constantly going on here and, I am informed, giving complete satisfaction. As the people realize the advantages to be derived from such a water supply, it will become increasingly popular and the business will develop to important proportions.—*K. K. Kenneday, Consul, Para, Brazil, September 9, 1903.*

American Glass Goods in England.—A firm of silversmiths and platers writes me that "American glass goods—such as jars, butter dishes, etc.—suitable for mounting in silver are selling on the English market," and they have been told that these American goods "are remarkably cheap and good, and better than the Austrian goods, of which they buy a large quantity." This firm asks if I "know the address in England of this American firm." I do not know the address.—*Marshal Halstead, Consul, Birmingham, England, September 29, 1903.*

American Trade in Aix la Chapelle.—There is more evidence of American goods for sale in the shops of this city at present than at any previous time. Aix la Chapelle is a good market for American manufactures, but could be greatly enlarged if the trade were properly worked. American shoes, cash registers, and sporting goods seem to be established in popular favor and in demand.—*Frank M. Brundage, Consul, Aix la Chapelle, Germany, August 29, 1903.*

Americans and American Investments in Chihuahua.—Since my last annual report (printed in Commercial Relations for 1902) the Kansas City, Mexico and Orient Railroad has built and is operating 40 miles of its line eastward from this city. The Parral and Durango Railroad has built about 8 miles of extension west of Parral, and is building westward into the Sierra Mountains to reach the timber lands. It may be safely estimated that $2,000,000 of American gold has been invested in this district, chiefly in mines, machinery, and development work. There are now in the district and engaged in regular business, or as employees, about 600 Americans, many of whom have their families with them.—*W. W. Mills, Consul, Chihuahua, Mexico, October 1, 1903.*

Americans and American Trade in Parral.—During the last year there has been invested at least $1,500,000 of American capital in this district, and a large amount of development work has been done; a number of important mining plants have been erected and a few good mines have been developed. I estimate the number of Americans in this district interested in business at 200. There has been a marked increase in imports from the United States during the year. The largest increase has been in mining machinery. Groceries are imported by the carload. A large increase in the imports of American boots and shoes has also taken place during the year, with a fair increase in the imports of dry goods, hardware, and agricultural machinery.—*James J. Long, Consular Agent, Parral, Mexico, September 8, 1903.*

American Iron and Steel in Germany.—During the last few weeks the German bourses and trade circles have been much disturbed by reports that contracts had been made for the shipment of American iron and steel to Germany. The annual reports lately issued by the German chambers of commerce declare that the heavy imports of German manufactured articles by the United States in 1902 was the chief cause of relieving the severe industrial crisis which has overtaken Germany; but fears are expressed that these importations may cease and that the United States will inundate the European markets with its surplus of steel and iron products at prices with which the European works can not compete.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, September 21, 1903.*

Direct Steam Communication with Cadiz.—The Ceballos Line is to make Cadiz a port of monthly call. The first steamer, the *Captain W. Menzell*, leaves for New York direct on the 25th of this month, other steamers to follow the middle of every month. The *Captain W. Menzell* left New York for Cadiz, via Barcelona, Almeria, and Malaga, and I understand that vessels in future are to touch here on both the outward and homeward voyage.—*R. M. Bartleman, Consul, Cadiz, Spain, September 14, 1903.*

New Steamship Service to Porto Rico.—United States Commercial Agent Joseph Haven, of St. Christopher, under date of September 14, 1903, reports that the Royal Mail steamers, formerly running between Barbados and St. Thomas, are to extend their service to San Juan, Porto Rico, making that port their terminus. This change, he notes, will make St. Christopher still more important as a port of call, as it is to be placed in direct communication with Porto Rico and in closer touch with the United States and with Cuba and other islands of the West Indies.

New Steam Service between New York and Antigua.—Mr. Dobson, the agent of the Italian Royal Mail Steamship Company (Limited), informs me that his company has now completed arrangements for a regular service every twenty days between here and New York. The steamer *Etruria* will leave New York for the West Indies on October 4 and a steamer every twenty days thereafter. The steamers will carry mail, passengers, and freight, and freight rates will be greatly reduced. While the Quebec Line has been charging 55 cents a dry barrel from New York to Antigua, the Italian Line will only charge 35 cents, and the rate on sugar to New York will be reduced from 13 cents to 9 cents per 100 pounds.—*W. R. Estes, Consul, Antigua, West Indies, September 7, 1903.*

American Trade in the Dominican Republic.—Minister W. F. Powell writes from Santo Domingo, September 16, 1903, that importations from the United States into the Republic have increased more than 25 per cent during the past ten years in certain classes of textile goods. Americans have almost complete control of the market for shoes, having supplanted the French in the sale of this article. The trade of Germany and England in the finer classes of textile goods surpasses that of the United States. Germany leads in bric-a-brac and cutlery and France in the finer classes of goods and perfumery. The United States has a monopoly of the provision market in the Republic. The greater part of Dominican exports go to United States markets.

Exports from Puerto Cortes, Honduras.—Exports from Puerto Cortes to the United States during the quarter ended September 30, 1903, amounted to $255,426 and to Cuba (cattle) $121,720, making a total for the port of $377,146, an increase of more than 50 per cent over the same quarter in 1902. Exports from the port to the United

States alone will amount for the calendar year 1903 to nearly $1,000,000, and this will, without doubt, be doubled for the year 1904. These figures show the increasing importance of Puerto Cortes in its relation to the United States.—*Wm. E. Alger, Consul, Puerto Cortes, Honduras, October 3, 1903.*

Cigarette Paper Wanted in Greece.—According to the Empros, an Athenian newspaper, the Greek Minister of Finance has issued a call for bids or proposals for furnishing the Greek Government with a supply of cigarette paper of different qualities, and copies of the call have been forwarded, through the Ministry of Foreign Affairs, to the diplomatic and consular representatives of Greece in Europe. Bids must be addressed to the Minister of Finance and will be received to December 13, 1903. Cigarette paper is one of the monopolies of the Greek Government. The newspaper does not state what amount of paper is mentioned in this call. In 1901 the Government received from consumers of cigarette paper over $534,000, and in 1902 $437,000.—*Daniel E. McGinley, Consul, Athens, Greece, September 19, 1903.*

American Trade at St. John's, Quebec.—There is a marked increase in American goods kept by the merchants of St. John's, and they report an increasing demand for New York styles; the demand is for the latest styles and best qualities. Dealers sold $12,000 worth of American agricultural implements this season. If wholesale merchants and manufacturers would send more salesmen into Canada they could largely increase their sales in the Dominion. The value of the exports declared at this consulate for shipment to the United States during the year ended June 30, 1903, was $280,761, of which hay alone amounted to $178,198.—*Charles Deal, Consul, St. John's, Quebec, Canada, September 30, 1903.*

Trade Statistics at Fault.—I hear frequent complaints among French exporters of the statistics of the business done between the United States and France generally. They insist that they sell a great deal of silk to our country which is credited to Great Britain because it is generally shipped from Havre in an English ship. Automobile manufacturers in French cities assert that they sell twice as many automobiles to the United States as they are credited with in the French and American statistics. According to recent French statistics, Great Britain imported automobiles from France in 1902 to the value of 19,189,960 francs ($3,703,662) and the United States 429,060 francs' ($82,808) worth in the same year. This figure is undoubtedly far below the actual amount exported to the United States.—*John C. Covert, Consul, Lyons, France, September 9, 1903.*

American and German Sewing Machines in Japan.—The German press, in commenting on the sewing-machine trade in Japan, points out that the importation of American sewing machines into Japan has increased elevenfold over that of Germany since 1893, although the American machines command much higher prices than those made in Germany. The reason for this is said to be the superior management of American companies in their business methods, such as establishing depots and agencies all over Japan; keeping branches, where all parts of the machines can be obtained, in the chief business centers; selling on the installment plan to private persons and sending salesmen to every town and village. The papers admonish the German sewing-machine manufacturers to make more energetic efforts to dispute the American advance in Japan.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, September 4, 1903.*

Germany at the St. Louis World's Fair.—Under date of September 16, 1903, United States Consul-General Guenther, of Frankfort, Germany, transmits the following article from the September publication of the Chamber of Commerce of Frankfort:

> Almost daily lately the commissioner of the German Empire for the World's Fair at St. Louis, 1904, receives requests for a list of German exhibitors at St. Louis. This list can not be published yet, as the negotiations concerning the collective and grouped exhibits have not been concluded. Considering the situation, the publication of the list is not to be expected before the end of the present year. The time of its issuance will, however, be published, and the list can then be had through any bookstore.

Brazil at the St. Louis Exposition.—Businesslike preparations of vast magnitude are now under way on the part of the governments of the States of Para and Amazonas, comprising northern Brazil, for their exhibits at the Louisiana Purchase Exposition in St. Louis next year. It is now assured, therefore, that the Amazon Valley will have at this great exposition a strikingly unique exhibition of its progress and ambitions—its chief industry, rubber; its illimitable forests; its mineral resources, etc. This will be the first complete foreign exhibit comprehensively representing the natural products and the manufacturing and industrial energy and the artistic genius of northern Brazil. Every important product of this wonderful region will be shown, besides many curious exhibits of little-known native life—architecture, tools, weapons, methods of transportation, etc.—as well as a very complete collection of the flora and fauna of the country, which is now being prepared by representatives of the Government.—*K. K. Kenneday, Consul, Para, Brazil, September 9, 1903.*

Fighting the American Petroleum Trade in Germany.—An inquiry has been received by the Solingen Chamber of Commerce from the Chamber of Commerce at Giessen as to the effect of the establishment of the German-American Petroleum Company's tanks at Solingen upon the wholesale and retail dealers of petroleum, and also as to the manner in which the petroleum is sold by the company. Through this inquiry the fact seems to have been established that the German-American Petroleum Company has attempted, by means of its tanks, to monopolize the local market, but thus far has not been entirely successful, because quite a number of the local wholesalers, although at great sacrifice to themselves, have steadily opposed the company. The sales of the German-American Petroleum Company to the retailer are effected by means of street tank wagons, and the retailer is supplied with petroleum-measuring apparatus free of charge, which, however, is kept locked by the company, thus compelling the retailer to use the company's oil. The German-American Petroleum Company makes no sales directly to the consumer.—*Joseph J. Langer, Consul, Solingen, Germany, October 1, 1903.*

American Periodicals at Rouen.—This consulate is in receipt of the following trade periodicals, some of which come regularly, others occasionally:

Trade Press List, Boston.
Hide and Leather, Chicago.
Spokesman, Cincinnati.
Iron Trade Review, Cleveland.
Rock Products, Louisville.
Engineering News, New York.
Scientific American, New York.
Street Railway Journal, New York.
Dunn's Review, New York.
Upholsterer, New York.
Engineering and Mining Journal, New York.
American Stationer, New York.
Bicycling World, New York.
Metal Worker, New York.
Marine Engineering, New York.
American Silk Journal, New York.
Exporters and Importers, New York.
Export Implement Age, Philadelphia.
Keystone, Philadelphia.
Butchers' and Packers' Gazette, St. Louis.
World's Fair Bulletin, St. Louis.
Southern Field, Washington.

In addition to these there are received the New York Tribune Review, the New York Daily Sun, and the Economist. All publications received are placed where it is thought they will do the most good.—*Thornwell Haynes, Consul, Rouen, France, September 3, 1903.*

Opening for Mill Machinery in Warsaw.—There is a knitting mill for the manufacture of cotton hosiery in process of erection here, and an opportunity for American manufacturers of machinery thus presents itself. The machines with which they are familiar here are of two kinds (both of German manufacture), viz, (1) machines which knit the stocking down to the sole and (2) machines for knitting the sole. These machines have the following faults: (1) They produce too small a quantity; (2) are constantly in need of repair; (3) it requires two machines to knit one stocking; and (4) the ends of the stocking have to be sewn together on a separate machine. A machine which knits ribbed and ornamented stockings is manufactured in the United States. This machine, if properly represented here, should find a ready sale. In the projected mill cotton yarn will be used, and either gas or electricity will be the motive power. Our manufacturers should address M. Greynetz, No. 25 Dluga, Warsaw, in either the Polish, Russian, or German language.—*Clarence Rice Slocum, Consul, Warsaw, Russia, September 18, 1903.*

Information for Shippers to Lourenço Marquez.—United States Consul Hollis, writing from Lourenço Marquez, Portuguese East Africa, gives the following information for American shippers to that port. In the first place, Mr. Hollis insists that there is no such port as "Delagoa Bay," but that Lourenço Marquez is the name of the port, and shippers should be careful not to confound the two names in their shipping papers, as complications of a more or less serious nature might arise therefrom. The harbor at Lourenço Marquez is divided into two parts—the western part is for trading vessels and the eastern for men-of-war and for quarantine anchorage.* A small town called Matalla, some 6 miles up the Espirito Santo River, has lately become a port for the discharge of cargoes; even vessels chartered to go to Delagoa Bay (Lourenço Marquez) have, in some instances, been required to discharge their cargoes at Matalla. Work is being rapidly pushed on a very extensive cold-storage plant at this point, where the Anglo-American Live Stock and Trading Company disembarks its cattle, etc.

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*Reference is here made to detailed information under the heading "Tariff and port dues," published in Commercial Relations of the United States for the year 1898, vol. 1, p. 201.

Improvement in Brakes for Warp Beams.—Mr. Ernst Buschmann, of this city (Glauchau), has recently invented a new and useful improvement in brakes for warp beams, which I am sure will be of interest to those in the textile trade. The invention can be applied to all systems of looms and warp beams of any diameter. For detail information I would refer interested parties to the inventor.—*E. A. Creevey, Consul, Glauchau, Germany, September 16, 1903.*

New Vocation for Women.—The German press reports that a new vocation has been found for women on account of the use of Roentgen rays (X rays) in the hospitals. Courses of lectures for the instruction of X-ray nurses will soon be commenced at Berlin. These women will only serve as nurses of patients treated by X rays and as assistants at the use of them, which service is of a very delicate nature and requiring great care.—*Richard Guenther, Consul-General, Frankfort, Germany, September 11, 1903.*

Alcohol from Sawdust.—It is reported that a Norwegian chemist has discovered a new and cheap process for making alcohol from sawdust. Sawdust is treated under pressure with diluted sulphuric acid, by which the cellulose is transformed into sugar, which, by adding fermentation producers, is converted into alcohol in the old manner and then distilled. One hundred kilograms (220.46 pounds) of sawdust yield from 6 to 7 kilograms (13.2 to 15.4 pounds) of alcohol. Valuable by-products are methyl alcohol and acetic acid. While in Norway 100 kilograms (220.46 pounds) of potato alcohol costs $10.50, the price of sawdust alcohol is only $6.50.—*Richard Guenther, Consul-General, Frankfort, Germany, September 19, 1903.*

Ammonal, a New Explosive.—The latest in explosives, according to Metal Industry, is powdered aluminum, mixed with nitrate of ammonia and put upon the market under the name of "ammonal." This explosive is said to be one of the surest and safest known, as it can not be exploded by friction or blow, while otherwise containing all requisites of an explosive. The fact that aluminum is not affected by nitric acid gives the important property to ammonal of not being subject to disintegration. As it is not affected by frost, accidents which so often occur when thawing out frozen dynamite are not to be feared. The explosion is caused by an ordinary cap. Another important property claimed for ammonal is that it is not affected by moisture.—*Richard Guenther, Consul-General, Frankfort, Germany, September 18, 1903.*

Plague Prevention by Vaccination.—As the plague has again made its appearance at European ports, interest in remedies for and preventatives of the scourge is naturally very keen. Preventive inoculation, or vaccination, is considered of first importance. The Medical Record draws a comparison between the present situation at Hongkong and Manila with reference to the value of preventive inoculation. In both cities the plague exists, and at both many intelligent efforts have been made to suppress it, but not with the same results. At Manila the plague has subsided very materially and will probably soon disappear, but it seems that it can not be suppressed at Hongkong. The reason for this can only be found in the fact that at Manila preventive vaccination has been compulsory and on a large scale, including the 60,000 Chinese residents. It has been proven that the vaccination in use there, if repeated in intervals of ten days, is as certainly effective as vaccination against smallpox.—*Richard Guenther, Consul-General, Frankfort, Germany, September 18, 1903.*

German Cotton Supply.—The Central Union of German Manufacturers lately issued a call, inviting all the bodies interested in the cotton industries to meet on September 30, 1903. Seventeen prominent corporations sent representatives to the meeting, and many members of the colonization and economic committees were present. The chief topic discussed was "The cotton supply for the German industries and the efforts to extend cotton culture outside of the United States." Messrs. Supf and Wilckens, of the German Colonial Association, spoke on what had already been done in this matter by the association, and recommended that the German manufacturers and others interested in this important question should assist the movement by money contributions. Several of the delegates gave the assurance that large amounts to further the movement would be subscribed.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, October 3, 1903.*

Cotton Growing in Lagos, West Africa.—The newspapers print an interview which a Reuter's representative had with a member of the Lagos legislature, who has just arrived from West Africa, and who gives an encouraging account of the prospects for cotton growing in that colony. From the interview the following interesting statements are extracted:

The governor is taking up the matter in the most energetic manner. Recently he visited the hinterland centers and addressed the chiefs and natives on the importance of cotton growing. Subsequently, he had numerous requests for seed to start the industry. Many tons were distributed, and now an extensive area is under cultivation. There are many thousands of acres in the vicinity of the newly constructed railway which are available for cotton growing, and this land it is expected will, at no distant date, be fields of growing cotton. During the American civil war, and also at the time of the notable cotton famine, Lagos produced large quantities of cotton and at present there are many parts of the colony where the residue of this cotton is growing wild. This cotton, which is described as "native cotton," is of fine quality. Reuter's informant held the view that in years to come Africa would be able to grow all the cotton which the English manufacturer would require and still have a surplus for exportation. The natives were being stimulated by the fact that such leading commercial men as Sir Alfred Jones and others in England were energetically taking up the subject. At present, in order to encourage cotton growing, the Lagos Railway is conveying the new crop to the coast free of charge, and the Elder-Dempster Line steamers were carrying it to England without charge.

A cablegram received this week in Liverpool from Lagos said that the natives were enthusiastically engaging in the industry.—*Marshal Halstead, Consul, Birmingham, England, October 21, 1903.*

Foreign Trade of France.—The foreign trade of France during the eight months ended August 31, 1903, was as follows: Imports, 3,092,700,000 francs ($596,891,100); exports, 2,749,500,000 francs ($530,653,500)—an increase, as compared with the same period of 1902, of 167,700,000 francs ($32,365,100) in the imports and of 7,400,000 francs ($1,428,200) in the exports.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, September 21, 1903.*

Cutting Trees by Electricity.—It is reported in the German press that successful experiments have been made in various forests of France in cutting trees by means of electricity. A platinum wire is heated to a white heat by an electric current and used like a saw. In this manner the tree is felled much easier and quicker than in the old way; no sawdust is produced, and the slight carbonization caused by the hot wire acts as a preservative of the wood. The new method is said to require only one-eighth of the time consumed by the old sawing process.—*Richard Guenther, Consul-General, Frankfort, Germany, September 10, 1903.*

New Turbine Channel Steamer.—The associated companies which have conducted the transportation service from Paris to London via Rouen, Dieppe, and Newhaven have recently put in service a new boat, the power for which is furnished by engines of the turbine type. The boat is of 1,150 gross tons, and the engines are of 6,000 to 7,000 horsepower. On the trial trip the boat made 21.2

knots an hour. The three compound turbines are much lower than the older type of engines and are arranged in the bottom of the boat, leaving the decks free to voyagers. They emit no odor, are comparatively noiseless, and cause but little vibration. The number of revolutions, which in the first channel boats was 2,000, is in the new boat reduced to 600. The first trip across the channel between Dieppe and Newhaven, a distance of 64.75 miles, was made in three and one-half hours.—*Thornwell Haynes, Consul, Rouen, France, September 21, 1903.*

Foreigners in German Technical Schools.—According to latest reports, the technical colleges of Germany are attended by 12,384 German and 2,242 foreign students, 43 per cent of the latter being Russians. Some of the German papers are again protesting against the admission of foreigners to German technical seats of learning, fearing it will injure the manufacturing and export interests of Germany. It is especially the fear of competition from the United States which causes this cry for exclusion.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, September 10, 1903.*

Consumption of Potatoes in Germany.—Germany, according to statements in the German press, is the country consuming the most potatoes. In Germany 158 acres per every 1,000 of the population are planted with potatoes—almost five times as much as in the United States. The ratio for Great Britain and Ireland is only 30 acres. The London Engineer says that the production of potatoes in Germany will be even more important in the future on account of the increasing consumption of potato alcohol for automobile purposes.—*Richard Guenther, Consul-General, Frankfort, Germany, September 10, 1903.*

Opposition to Restriction of Trusts in Germany.—In its annual report the Hamburg Chamber of Commerce deprecates any restrictive measures against the extension or the activity of commercial combines—the so-called trusts or syndicates. The chamber holds such repressive action on the part of the Government to be injurious to the general economic interests of the country. The chamber believes that any abuses attending the activity of trusts can be corrected by legislation.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, October 3, 1903.*

Danger in Celluloid Doll Heads.—A Leipzig trade paper, in reporting on the recent fair held in that city, speaks favorably of a new line of doll heads, made of tin and covered with celluloid. The opinion is expressed in the paper quoted that this novelty is a desirable improvement, as many lines of doll heads now in the market are composed of celluloid and are of great danger to children, on account of the liability to explosion to which celluloid is subject. The paper says the use of celluloid in the manufacture of toys is making steady progress.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, September 10, 1903.*

German Locomotives for Japan.—The long and severe depression existing in German industries has forced her manufacturers to hustle for orders from foreign countries, even though prices obtained leave no profit. Two German works (the Hanover Machine Works and Henschel & Son, at Cassel) have been awarded the contract for 60 locomotives by the Japanese Government against 1 Belgian, 5 English, and 5 American bidders. The successful bids were $9,679 and $9,708 per locomotive. The next lowest bid, by one of the English companies, was $9,772.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, September 25, 1903.*

Failure of the Tobacco Crop in Hanover.—Owing to the severe hailstorms in the Eichsfeld district of the Province of Hanover during the past summer, the tobacco crop has been almost entirely destroyed. Many of the farmers—in order to avoid the payment of the production tax—have waived all claims to their tobacco crops. At the fair which was held at Solingen last fall over 40,000 marks' ($9,520) worth of tobacco was sold; this year, however, hardly a pound will be even offered for sale. As the tobacco crop was not insured, the farmers have sustained very considerable losses.—*Brainard H. Warner, jr., Consul, Leipzig, Germany, September 15, 1903.*

Federal Automobile Law for Germany.—Some time ago the German Government ordered the collection of statistics of all accidents which were caused by motor vehicles within the last two preceding years. The Secretary of the Interior, Count Posadowsky, has now communicated with the governments of the various German States with a view of regulating the automobile traffic by a uniform federal law. All the governments have consented, so that a bill could be drafted which will probably be submitted to the Reichstag at its next session. The Federal Government has in this manner complied with the wishes of the automobile and bicycle associations, which have repeatedly petitioned that a uniform federal law be substituted for the local police regulations, which differ almost everywhere.—*Richard Guenther, Consul-General, Frankfort, Germany, September 11, 1903*

German-Oriental Mail Service via Siberia.—An international mail service will be inaugurated over the Siberian railroads October 1, 1903, and will forward German mail matter of every description to the following countries of eastern Asia: China, excepting the southern part; to the German protectorate of Kyao-chau; to Japan, excepting the island of Formosa; and to Korea. This mail route offers a service of four times a week to Peking, Tientsin, Tongku, and Chefoo and at least a weekly service to Shanghai and to Japan. The first mail via Siberia will leave Berlin September 30. Mail will be forwarded daily. The time of transit to Peking and Tientsin, according to connections with Berlin, will be from twenty to twenty-two days, and to Shanghai and Nagasaki from twenty-two to twenty-eight days.—*Richard Guenther, Consul-General, Frankfort, Germany, September 18, 1903.*

The New German Tariff.—The German tariff act passed during the last session of the Reichstag is supposed by many to be in operation. Such is not the case. It is left to the National Executive to fix the date it shall take effect, which, it is to be assumed, will be announced by an imperial proclamation. It is held by the representatives of some countries that the higher rates of duties established by the new act can not be collected until one year from the date the German Government notifies the foreign nations with which commercial treaties are in force of its purpose to terminate them. Under these conditions the German bureau for the preparation of commercial treaties considers it very desirable that the Government, by an official opinion on this subject, should set all doubts and uncertainties at rest.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, September 20, 1903.*

German Consular Reports.—In reply to a Government inquiry, the chambers of commerce throughout Germany signify their satisfaction with the published consular news sheets (an imitation of our DAILY CONSULAR REPORTS), issued by the Imperial Ministry of the Interior to aid German industries and the German export trade.

In reply to the Government's question whether the distribution and scope of these news sheets should be extended by the addition of information concerning home industries and home trade, most of the answers are in the negative, not a few expressing fears that thereby foreign producers and exporters might be benefited.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, October 3, 1903.*

Automobiles vs. Omnibuses in Baden.—The historic old "bus," which for ages has done service carrying passengers and the mails between various towns in this section of Baden where the steam railroads do not touch, is giving way to large automobiles, which travel much quicker and are much more comfortable. An automobile line is about to be established between the city of Kehl and the town of Rheinbishopsheim, a distance of 10 miles. The automobile will accommodate twenty persons, in addition to space for the baggage and mails. The round trip will cost 17 cents, or 10 cents for one way. Several trips will be made each day. The automobile is the property of the towns of Rheinbishopsheim and Bodersweiler, and was purchased at a cost of $3,332. The towns pay all running expenses and divide the profits. An additional sum is paid by the various towns along the line for the privilege of having the mails carried.—*Joseph I. Brittain, Consul, Kehl, Germany, September 22, 1903.*

Boycotting the German-American Petroleum Company.—The Frankfurter Zeitung of September 10 prints a communication from Holzminden, dated September 7, which states that "the petroleum dealers publish a declaration in the official district paper, according to which they have pledged their word of honor not to buy any more from the German-American Petroleum Company, as it aspires to become a monopoly. In the discussions it has been mentioned that the government of Brunswick does not consider that the arrangements made by the German-American company for the retailers are in conformity with the provisions of the law, and that therefore the official order for their removal will be issued very shortly."—*Richard Guenther, Consul-General, Frankfort, Germany, September 10, 1903.*

Cheap Electricity in Berlin.—On the 1st of January, 1904, the cost of electric current for lighting purposes in Berlin will be reduced from 55 pfennigs (13¾ cents) to 40 pfennigs (10 cents) per kilowatt hour. This change of price, made to meet the competition of gas, which is furnished for lighting as well as for heating and cooking purposes at 3¼ cents per cubic meter (35.316 cubic feet), will amount to a reduction of 27 per cent and will give Berlin the cheapest electric light of any European city where the current is generated by steam power or by gas engines without the aid of water power. The rates for lighting purposes per kilowatt hour in some other European cities are as follows: Breslau, 17 cents; Budapest, 23½ cents; Christiania, 14 cents; Genoa, 18 cents; Cologne, Leipzig, and Nuremberg, 18½ cents; Dresden, Frankfort, Munich, and Hamburg, 15 cents; Copenhagen, 14 cents; Rotterdam, 17 cents; and Vienna, 15 cents. For power purposes electric current is supplied in Berlin as low as 17 pfennigs (4¼ cents) per kilowatt hour, and when used in large quantities during daylight hours this price is still further reduced to 14 pfennigs (3½ cents), which probably represents the low-water mark of steam-generated current in a European city.—*Frank H. Mason, Consul-General, Berlin, Germany, September 21, 1903.*

Trade of the German Colonies.—According to an official publication the imports and exports of the German colonies in 1902 amounted to 85,100,000 marks ($20,253,800), divided as follows:

Colony.	Value of trade.	
	Marks.	
Togo	10,300,000	$2,451,400
Kamerun	15,200,000	3,617,600
Southwest Africa	10,800,000	2,570,400
East Africa	14,100,000	3,355,800
South Sea colonies	8,700,000	2,076,600
Kyao-chau (China)	26,000,000	6,188,000
Total	85,100,000	20,253,800

Germany supplies about 50 per cent of the imports of her colonies; but the expense of administering these colonies is very heavy and out of all proportion to the profits realized from their trade. It is hoped by the German Government that they may in time become supply sources for raw materials (cotton, coffee, rubber, etc.) for the home industries and attract the emigrating surplus of the German population.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, September 21, 1903.*

Canadian Surtax on German Goods.—United States Consul Charles Deal, of St. John's, Quebec, under date of September 30, 1903, transmits a newspaper extract showing that at midnight of that date the surtax on German merchandise imported into Canada went into effect, and thereafter goods imported from the German Empire would be obliged to pay one-third more duty than goods from any other country. According to the customs act, section 150, all goods entering the port of Montreal by water before midnight September 30 and, if imported by land, reaching the borders of the Dominion by the same hour will be entered at the duty less the surtax. Again, German goods warehoused previous to the 16th of April may be taken out of bond any time up to the 1st of January without paying anything beyond the old rate of duty.

Copper and Asbestos Mines of Quebec.—The copper mines at Eustis and Capelton, 8 miles south of Sherbrooke, on the Boston and Maine Railroad, have been worked to advantage. They give employment to about 300 men. A company was formed last year for the purpose of erecting a smelter at Sherbrooke, but it has been unable as yet to raise the necessary funds to install the plant. If this smelter could be built and put in operation it would put new life into the mining industry in this region and be the means of opening up many new copper properties as well as renewing work on old ones, which were abandoned because of lack of smelting facilities at reasonable prices. The asbestos mines at Thetford and Black Lake, on the Quebec Central Railway, have had a good year. Their shipments to the United States amounted to $647,067, as compared with $610,741 in 1902.—*Paul Lang*, *Consul*, *Sherbrooke*, *Canada*, *September 24*, *1903*.

Nickel Mines of Ontario.—Professor Coleman, of the University of Toronto, who, with an exploring party, has spent the summer in the Sudbury nickel district investigating the ore deposits for the Ontario government, has just returned. The professor says he found the Sudbury deposit practically a continuation of the southern range, the whole forming a great oval 40 miles long and 20 miles broad. In quantity the Sudbury deposits surpass any other nickel deposits in the world; in percentage of nickel in the ore, however, they are hardly up to the deposits of New Caledonia. The average percentage of nickel is about 2.5 per cent, though some ore runs as high as 5 per cent. There is more sulphur and copper in the ore than in New Caledonia ores.—*M. J. Burke*, *Consul*, *St. Thomas*, *Canada*, *October 9*, *1903*.

Agricultural Prosperity in Western Ontario.—This has been one of the most prosperous years for western Ontario in the history of the Province. Abundant rain during the summer has produced crops of every kind far above the normal yield. The cool, wet summer has been exceptionally beneficial to the dairy interest. Cheese factories, of which there are many in this consular district, have produced a larger quantity and a better quality of cheese than at any other period in the past. The county of Perth is the pioneer county in Canada in the adoption of modern dairying methods. Many of the factories are models of scientific cheese making, and their products have secured a reputation during the past few years as being among the very best in the world. Farmers who furnish the milk are reaping the benefit of these progressive operations, and many of them have become independently rich as the result. Barley, oats, corn for the silo, and roots are very largely taking the place of wheat as farm products in this part of the Province. The only complaint farmers have is the scarcity of help. The farmer who has a family not sufficiently grown to aid him is at a great disadvantage, for it is next to impossible to procure outside help for the farm.—*A. G. Seyfert, Consul, Stratford, Canada, October 8, 1903.*

Canadian Woolen Industry.—Under date of October 1, 1903, United States Commercial Agent Beutelspacher, of Moncton, New Brunswick, transmits the following extract from the Toronto World relative to the shutting down of many Canadian woolen mills on account of the flooding of their home markets by British and American products:

OTTAWA, *September 25.*

The woolen industry of Canada is in peril. Some of the biggest mills in the country are closing down, and a prominent woolen manufacturer told the Toronto World correspondent to-night that the depression is in its infancy. The two mills at Carleton operated by the Canadian Woolen Company have closed down. Hawthorne & Gillies mill has closed its doors. Within two weeks the Ashburn Woolen Company, of Peterboro, will suspend operations. This Peterboro mill has been running without interruption for twenty-five years. The Excelsior Woolen Mills, of Montreal, will, it is stated, close down in a short time, and other mills are at a standstill. The outlook is gloomy. Canadian manufacturers are menaced by conditions that make it profitable for British and United States woolen mills to dump their goods on Canada at prices which the home industries simply can not meet. Canada is being used as a slaughter market. The result may be satisfactory to British manufacturers who find a diminished demand in their own market, but it will be ruinous to Canadian industries. "Disaster to our woolen industries has been long promised," said the World's informant. "Now misfortune is upon us, and I look for the very worst. We can not combat the influences that are at work. I have no hesitation in saying that the Canadian woolen industry is fighting for its life to-day, and the battle is already more than half lost."

Typewriters to be Admitted Free into Peru.—Minister I. B. Dudley sends from Lima, September 12, 1903, copy of a law admitting typewriting machines into Peru free of duty. They have heretofore, Mr. Dudley notes, paid a duty of 40 per cent ad valorem.

Decree Relative to Goods Entering Venezuela through Carupano.—Under date of September 15, 1903, United States Consul E. H. Plumacher, of Maracaibo, transmits a decree (in Spanish) issued by President Castro relative to goods entering Venezuela through the port of Carupano, of which the following is a translation:

> In consideration of the fact that merchandise and other effects that enter from abroad and are examined at the custom-house of Carupano, but are destined for other ports of the East, are burdened with the costs of disembarkation and of the coast trade, the President of the Republic has decreed that such merchandise and effects, destined for the ports of Ciudad Bolivar, Cano Colorado, Guerra, Puerto Sucra, and Guanta will be entitled to an abatement of customs tariff of 5 cents Bolivian on each kilogram (1 cent per 2.2046 pounds); the concession to apply only to such goods and effects as have been examined and sent forward to destination.

Increase in the Import Duties of Guatemala.—A decree recently issued by the Government of Guatemala makes a decided increase in the duty collected on imports. The law provides that 30 per cent of the customs duties be paid the Banco de Guatemala for certain bondholders. Until this decree was issued importers paid this 30 per cent on a basis of 10 to 1 United States gold, according to a former decree; but now the 30 per cent must be paid in gold or its equivalent in exchange. To illustrate: Formerly, where the duty amounted to $100, it was necessary to pay 30 per cent at the rate of 10 to 1, or $300 Guatemalan and the $70, or a total of $370 in Guatemalan currency; while now one must pay 30 per cent in United States gold, which at the present rate of exchange (16 to 1) means $495 Guatemalan currency, and the $70, making $565—a difference of $195, or an increase of about 53 per cent in the real duty paid. This is a very considerable increase on what was already a heavy burden, and it has had a very depressing effect on all foreign business.—*Alfred A. Winslow, Consul-General, Guatemala City, Guatemala, September 7, 1903.*

South African Preferential Tariff.—The central bureau, of Berlin, for the preparation of commercial treaties issued, on September 4, 1903, a publication showing that the preferential tariff in favor of English goods is very materially curtailed by the free list of said tariff, which applies equally to all countries, and which is very extensive and comprises a large number of industrial products which play an important part in the imports of South Africa; for instance, agricultural machines and implements, as well as all apparatus chiefly used in farming. The iron, leather, and paper industries also enjoy the privilege of the free list for many of their products. In a very great degree this applies also to chemical products, of which the following can be imported free of duty and under the same conditions as English products: Borax, brome litharge, gun cotton, glycerin, and nitrates for manufacturing purposes; glue, artificial manure, potash, carbonate and bicarbonate of soda, caustic potash crystals and silicates, carbonate of ammonia, lymph, toxin, and serum.—*Richard Guenther, Consul-General, Frankfort, Germany, September 10, 1903.*

Increased Railway Freight Rates in Guatemala.—Freight rates on the Ferrocarril Central de Guatemala, the railway from San José to Guatemala City, have been doubled and are now 2 pesos Guatemalan currency (12 cents gold) per 100 pounds of coffee and 2.50 pesos (15 cents gold) per 100 pounds of flour for the 75 miles between these points. First-class freight rates are higher and local rates are very much higher. The company runs one daily train each way, with extras when business warrants it. The road seems to be in a very prosperous condition. An important feeder has been built during the past two years and is to be opened for traffic about November 15, 1903.—*Alfred A. Winslow, Consul-General, Guatemala City, Guatemala, September 19, 1903.*

Railway Concession in Mexico.—The Government has granted a concession to the National Railway of Mexico for the construction of a line from Salamanca to San Juan de la Vega. Surveys must begin within six months and the entire road be completed within five years. The road will be standard gauge, but a third rail will be laid to allow the transportation of narrow-gauge material. The company will pay monthly from the date of the concession $75 for the railroad inspection fund. A deposit by the company in the federal treasury of $3,000 in bonds of the 3 per cent silver consolidated debt guarantees the fulfillment of the obligations assumed under the concession.—*From El Economista Mexicano, October 3, 1903.*

Mexican-Central American Railway.—Parties from the United States were in Guatemala City recently in the interest of a railroad now being built from the City of Mexico south through the Central American republics. I am informed it is a part of the Mexican Central system. The road is being constructed at the rate of about half a mile a day, and is expected to reach the Guatemalan frontier within twelve months, leaving but about 25 miles to be built to connect with the Guatemala Central in order to reach this city. This will give direct rail connection with the United States. The builders are following very closely the survey made by the Intercontinental Railway Commission, and the road will doubtless become a part of that system, for the company expects to push on into Salvador. It is reported that the Guatemalan Government assured the parties that everything possible would be done to facilitate the construction of the road through this Republic.—*Alfred A. Winslow, Consul-General, Guatemala City, Guatemala, September 7, 1903.*

Swiss Railways and the Simplon Tunnel.—Under date of October 2, 1903, Consul Horace Lee Washington, of Geneva, in his report on the trade and industries of his consular district for 1902–3, gives the following information relative to Swiss railways and the Simplon Tunnel:

On May 1, 1903, the great railway company in this district—Jura-Simplon—the most important railway in the Republic, passed into the hands of the Swiss Confederation, the amount paid therefor being 104,000,000 francs ($20,072,000). All the large railway companies of Switzerland, with the exception of the Gothard Railway—which can not be purchased by the Government, by virtue of the original contract, before 1909—are now the property of the State. The tunnel through the Simplon is approaching completion despite the great difficulties encountered in the undertaking—extreme heat, the volume of water met with on the southern side, hot springs, etc.—only about 4 kilometers (2½ miles) remaining to be tunneled. Already new lines are projected as feeders to handle the great traffic expected on the completion of the tunnel. In this connection, the decision of the French Government to tunnel the Jura is looked for with eager interest by the Cantons of Vaud and Geneva. This is of great importance to the cities of Geneva and Lausanne, as the terminus in one or the other will depend on whether the Faueille is pierced or the short cut Frasnes-Vallorbe is adopted. The new electric railway—Montreux-Zweisimmen-Spietz—is approaching completion, and there is a good prospect that the entire line will be finished toward the close of 1904.

Combination of Italian Beet-Sugar Interests.—In Bologna the Italian sugar manufacturers lately met in convention to consider measures for the regulation of sugar production and to fix the acreage to be planted in beets, and a syndicate was formed to protect the Italian sugar planters and manufacturers. Within the last few years there has been a great increase in the sugar-beet production in Italy, but as prices have steadily declined the necessity for a combine of the interests involved has arisen.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, September 3, 1903.*

Beet-Sugar Industry of Spain.—Statistics of the beet-sugar production of Spain for comparative periods in 1902 and 1903 are just now available. The quantities of beets consumed and the production of sugar therefrom during the months of July and August in 1902 and 1903 were as follows:

Year.	Beets consumed.	Sugar produced.
	Pounds.	*Pounds.*
1903	107,696,516	8,638,520
1902	63,469,817	5,122,192
Increase	44,226,699	3,516,328

The most important establishment in Spain is the Santa Juliana, in Granada. In 1902 this factory produced 91,119 kilograms (200,462 pounds) of sugar from 2,200,000 kilograms (4,840,000 pounds) of beets, and in 1903 the output was 523,979 kilograms (1,152,754 pounds) of sugar from 6,030,780 kilograms (13,267,716 pounds) of beets. Of the fifty sugar factories in Spain, but twenty-two were in operation during July and August of this year.—*M. M. Price, Commercial Agent, Jeres de la Frontera, September 25, 1903.*

Currants and Petroleum in Greece.—According to the Official Gazette of August 4/17 the Greek Government has decided to retain 20 per cent of such part of this year's currant crop as may be offered for export. The Government has authorized an English company, the Oil Development Company (Limited), to bore for petroleum and naphtha on the island of Zante.—*John B. Jackson, Minister, Athens, Greece, September 1, 1903.*

Industrial Conditions in Colombia.—Owing to revolutions, overproduction, and other untoward circumstances, agricultural and industrial conditions in Colombia are not in a very satisfactory condition. There have been a number of efforts made in the past few years to develop the resources of the Republic, but with little success. For a time the exploitation of the gold fields promised important results, but the returns failed to compensate for the trying conditions under which operations were conducted, and the attention of investors and promoters was turned to the development of the quinia industry, which for a time returned large profits, but overproduction soon followed the extensive operations in this field and the rapid decline in prices which followed paralyzed the industry. The most promising prospect at present for successful investment and activity in agriculture is the development of the rubber industry, but its contribution to the progress and prosperity of the Republic is dependent upon the settlement of the boundary dispute between Colombia, Ecuador, and Peru, for in the disputed tract lie the rubber-tree forests.—*Alban G. Snyder, Consul-General, Bogotá, Colombia, August 21, 1903.*

Wages of Farm Hands in Guatemala.—On August 12 a circular was published by order of the President of the Republic of Guatemala and sent to the governors of the Provinces and States, decreeing that the wages paid farm hands after September 1, 1903, must be $1.50 Guatemalan currency (about 9 cents gold) per day, instead of 75 cents and $1 (4.5 and 6 cents gold), which were the rates before that date. This puts a heavy additional burden on the coffee and sugar planters, since wages is an important item in the production of these crops; and this, with the very low price of coffee and sugar and the threatened increase of the export tax from $6 Guatemalan currency (36 cents gold) per 100 pounds on coffee to $1 gold, makes the outlook for these industries very discouraging. Were it not for the richness of the soil, the favorable climate, and the superior coffee produced, this industry would indeed be in a deplorable condition. As it is, the majority of the planters will be able to about hold their own, but it is not expected that many new plantations will be opened up for some time.—*Alfred A. Winslow, Consul-General, Guatemala City, Guatemala, September 12, 1903.*

Packing-House and Refrigerating Plants in Mexico.—The North American Beef Company has been granted a concession by the Mexican Government authorizing it to build and operate two meat-packing establishments, one in the city of Uruapan, State of

Michoacan, and the other at a point near the line of the Ferrocarril Veracruz al Pacifico. The company is also authorized to establish two plants for the manufacture of pepsin, margarin, oleomargarine, refined animal oils, etc., and for the utilization of all by-products in the manufacture of felts, brushes, combs, buttons, and fertilizers, as well as to build and operate a refrigerating plant and cold-storage warehouses in the City of Mexico for the preservation of meat and other fresh food products.—*Wm. W. Canada, Consul, Veracruz, Mexico, September 25, 1903.*

Issue of Treasury Notes in the Netherlands.—United States Minister Newel writes from The Hague, September 18, 1903, that by royal order appearing in the Official Gazette of September 17, 1903, the Minister of Finance is authorized to issue treasury notes to the amount of 10,000,000 florins ($4,020,000), in accordance with the law of December 5, 1881.

Proposed Legislation in the Netherlands.—Under date of September 18, 1903, United States Minister Newel transmits from The Hague translation of the speech read by the Queen at the opening of the session of the States-General on the 15th of the same month. The following paragraphs from the speech contain the only matter of interest outside the Netherlands:

> In regard to labor, the disturbance (strike) in the ordinary course of affairs has not been without its injurious results. Nevertheless, the temperance which was exhibited by a majority of our working people gives reason to hope for a healthy progress in the labor movement, to which end I am desirous of cooperating by continued social legislation.
>
> I appeal to you for your cooperation for the regulation of Government subsidies, both to the public as well as to the private educational establishments; toward the placing of the sale of strong drinks under more efficacious stipulations; toward the extension of insurance against accidents to seafaring employment and to cases of sickness; and to the prevention of pollution of public water ways.
>
> Legislative proposals relating to a revision of the customs tariff, the regulation of patents, and the promotion of fishing in fresh waters will be laid before you.

Navigation at the Mouth of the Danube.—The Department of Commerce and Labor is in receipt, from Hon. John B. Jackson, United States minister to Roumania, of a copy of the statistics of navigation at the mouth of the Danube for the year 1902. The tables in the pamphlet show that vessels of seventeen nationalities passed out of the river or loaded at the port of Sulina. The nations represented are as follows, and are named in order according to amount of tonnage: Great Britain, Greece, Austria-Hungary, Italy, Russia, Turkey, Germany, Roumania, Holland, France, Spain, Belgium, Denmark, Norway, Sweden, Bulgaria, and Samos. No American ship seems to have visited the Danube in the last ten years, while the British tonnage is almost one-half of the entire total.

Foreign Trade of Roumania.—The new statistical bureau lately established by the Government of Roumania has issued the first official report, covering the trade of that Kingdom for the year 1902, from which I quote the following statistics: Imports of Roumania, 283,300,000 lei ($54,676,800); exports, 374,800,000 lei ($72,336,400). Roumanian exports consist chiefly of agricultural products. Since 1901 the exportation of petroleum and its by-products have increased considerably. An English company has erected a large meat packing and preserving factory, which will enlarge the exports to England. The United States does not appear in evidence in the commerce of Roumania.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, September 15, 1903.*

Italian Enterprise in Montenegro and Albania.—The Hungarian official organs take particular notice of all Italian commercial movements on the eastern coast of the Adriatic. Lately they report that Count Peter Foscari headed a financial deputation which visited Antivari, the port of Montenegro, to make a study of Montenegro's forests and asphalt and iron plants and to plan public works in Antivari—in particular, the construction of a good port for sea-going vessels. The deputation further studied the possibility of building a railroad to connect Antivari with Podgorica, Kolasin, and Miksics, for which purpose Montenegro is willing to mortgage her State tobacco monopoly. It is reported that Italian capital will back the proposed undertakings with 12,000,000 lire ($2,316,000). From Montenegro the deputation proceeded to Albania for a similar purpose.—*Frank Dyer Chester, Consul, Budapest, Hungary, September 21, 1903.*

Austrian-Swiss-Italian Commercial Treaties.—Austria-Hungary and Switzerland have notified Italy that they will not continue the present commercial treaties with that country. The treaties expire at the close of the present year. Negotiations are now being conducted for new commercial treaties.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, September 24, 1903.*

Tourists in Switzerland.—In his annual report, covering the trade and industries of his consular district for 1902–3, United States Consul Horace Lee Washington, of Geneva, gives the following statistics relative to visitors and tourists in Switzerland:

Up to September 15, 1903, visitors to the number of 171,639 (of whom 9,700 were Americans) had been registered at the hotels and pensions of Geneva, against 215,000 for the entire year 1902. It is thought the total of the visitors for the year 1903 will not equal that of the preceding year.

According to special yearly statistics (approximate) the visitors to Switzerland left the following amounts in the country during the year: Hotels, from $13,500,000 to $14,861,000; transportation companies, $3,088,000 to $3,474,000; incidental expenses, $1,544,000 to $2,123,000—a total, without reckoning purchases in shops and stores, of from $18,142,000 to $20,458,000. In this connection the running expenses of the hotel industry must be taken into account—food, wages, and other expenses—estimated at from $10,000,000 to $11,500,000. Dr. Freuler, a competent Swiss authority, says that less than one-fifth of the sums left in the hotels and pensions is contributed by the Swiss themselves.

British Bicycle Trade.—Accounts from Birmingham state that the British bicycle industry is depressed, the demand having materially declined, owing to the almost constant rainy weather in Europe this summer. Prices have been reduced fully 25 per cent to get rid of an accumulated stock of wheels.—*Simon W. Hanauer, Deputy Consul-General, Frankfort, Germany, September 3, 1903.*

Trains Superseded by Motor Cars.—Under date of September 22, 1903, United States Consul Halstead, of Birmingham, England, transmits the following from the Birmingham Post:

> Hitherto the inauguration of motor-car services by railway companies has been by way of feeding or supplementing the existing train routes. Now, however, an important departure is announced in connection with the Taff Vale Railway. From to-day the company's service of trains between Cowbridge and Aberthaw will be discontinued, owing to the insufficiency of passenger traffic between those places. In place of the trains taken away, however, the company will run a motor car capable of carrying fifty people. The car will be stopped not only at the stations en route, but at level crossings as well, and the fare to be charged is the usual parliamentary one of a penny (2 cents) a mile.

Comparative British Prices in 1892-1901 and 1902.—United States Consul Marshal Halstead, of Birmingham, England, transmits the following newspaper clipping:

The following summary table shows the average percentage of the main groups of articles in 1902, compared with the average of the preceding ten years, the percentages being based on a standard of 100 in 1871:

Group.	1902.	1892-1901.
Coal and metals	114.9	101
Textiles (raw materials)	65	62.3
Food and drink	76.7	75.4
Corn, etc	63.7	65.1
Meat, fish, and dairy produce	94.4	88.2
Sugar, tea, etc	46.1	56.6
Miscellaneous	69.2	66.8
Average of all groups	78.8	75.8

It will be seen from the above table that in each of the main groups the prices of 1902 were higher than the average of the preceding ten years, the greatest rise being in the coal and metals group, viz, from 101 to 114.9, or more than 13 per cent. In the food and drink group there was a considerable rise in the prices of meat, fish, and dairy produce, which, however, was more than counterbalanced by the fall in the prices of cereals, tea, sugar, etc. The rise in the total index number for 1902, as compared with the average for 1892–1901, was 3 per cent on the "standard."

If we turn to the tables of retail prices, which are hardly sufficiently complete to warrant treatment by the method of index numbers in an official publication like the present, the most important changes in 1902 to be noted are the decreases in the prices of coal, sugar, and butter, and the considerable rise in the price of beef. The average reduction in the price of coal, as compared with 1901, was 1s. (24 cents) per ton. As compared with the price in 1900, the reduction was much more considerable, amounting to about 4s. 3d. ($1.03) per ton, on the average. In 1900, however, the retail price of coal was higher than in any year since 1873. The retail price of sugar showed a tendency to fall in price during 1902, but it was still appreciably higher than in 1900. Sugar, however, is still less than half its price thirty years ago. During the year the price of butter was, on the whole, less than in 1901 by about 1d. (2 cents) per pound. The most considerable rise in retail prices in 1902 was undoubtedly that of beef, both British and foreign, which commenced in the month of May and continued gradually until in October the prices for all the best portions were 1½d. and 2d. (3 and 4 cents) per pound in excess of the prices at the same date in 1901. The prices of British and colonial mutton and of pork were also advanced, but the rise in these cases was not nearly so great, that of mutton being about ½d. (1 cent) per pound and that of pork 1d. (2 cents) per pound. There was a slight fall in the price of most kinds of farinaceous foods during 1902.

FOREIGN REPORTS AND PUBLICATIONS.

Gold Production in South Africa.—According to the South African Gazette, the output of gold in the Rand, South Africa, was 1,704,410 ounces in 1902; 1,837,134 ounces for the first eight months of 1903; 4,069,166 ounces in 1899; and 4,295,602 ounces in 1898. In 1900, during the war, it was, for January, February, and March, 251,891 ounces; for the last eight months of 1901 the production was 238,991 ounces.

Migratory Movement of Industries.—In its issue of September 17, 1903, Commercial Intelligence, a leading trade journal of London, England, calls attention to the migratory movements of industries. It says:

> A notable feature of the present economical situation in the industrial world is the migration of industries from one country to others, in order to neutralize protective tariffs or antagonistic labor movements, and the starting of factories outside of the zone covered by the hostile tariff. Thus many English firms have recently opened branch factories in the United States, and from Germany comes the news that representatives of several great German chemical industries are negotiating with the Russian authorities to obtain permission to establish works in Russia. Of course this movement on the part of the German manufacturers is the direct outcome of the new Russian tariff.

An English Floating Exhibition.—The Colonizer (an English publication) of September, 1903, states that a scheme is on foot for the organization of a floating industrial exhibition of British manufactures which is to make a tour of the Empire. The plan is to fit out a large ship with samples of all classes of manufactured articles which Great Britain supplies or can supply to her colonies. From fifty to one hundred firms are expected to furnish exhibits, and a representative of each firm will accompany the ship, which, in the course of a six months' voyage, will stop at every important port in the British colonies and dependencies, as well as at ports in Japan, China, and other countries to be selected. It is expected that the tour will begin in the early part of next year.

Campaign Literature in Great Britain.—The London Daily Mail, discussing the distribution of literature by the opposing parties in the pending campaign in Great Britain, states that Mr. Chamberlain's organization is distributing pamphlets at the rate of

400,000 per day, sending them mostly in small packages all over the country. About 16,000,000 pamphlets had at that date—September 21—been already issued, and the secretary of the Midland Liberal Union is quoted as saying that probably 50,000,000 leaflets will be distributed before the close of the campaign. The Free Trade Union had distributed at that date 14,000,000 pamphlets and was still issuing them at the rate of from 500,000 to 750,000 weekly, and the Unionist Free Food League was distributing them at the rate of 50,000 weekly. Large numbers of applications, it is added, are being received for these documents from Europe, Asia, Africa, and America, as well as from all parts of the United Kingdom and its colonies.

Leather School in London.—The Shoe and Leather Record, of London, says, in a recent issue, that a technical school for leather workers has been opened in London under the direction of an efficient corps of instructors. It is to give practical technical training in tanning, currying, leather dressing, dyeing, staining, and finishing. The London city leather workers' guilds have also instituted an examination in leather dyeing, staining, and finishing, divided into an elementary and an honor course, as is at present done in the dressing of skins and leather manufacture. The certificates issued in both cases are similar.

World's Production of Rubber.—The figures of the following table were published in Industrie et Commerce de Caoutchouc of November 6, 1903, and were compiled from that publication in the Bureau of Statistics, Department of Commerce and Labor:

Country of production.	Quantity produced.	
	1900.	1902.
	Tons.	*Tons.*
Brazil, Peru, and Bolivia	25,000	30,000
Other states of South America	3,500	1,000
Central America and Mexico	2,500	2,000
Straits Settlements and dependencies		1,000
East and West Africa and the Kongo country	24,000	20,000
Java, Borneo, etc	1,000	
Madagascar and Mauritius	1,000	
India, Burma, and Ceylon	500	
Total	57,500	54,000

Automobile Trade of France.—The automobile industry of France has had a very rapid development, and the foreign trade in the different varieties manufactured in France has been very favorable up to the present time. The amount of the export and import trade in automobiles and parts of automobiles in 1902 may be seen from the following table, which has been compiled in the Bureau of Statistics, Department of Commerce and Labor, from figures furnished by the trade:

Country.	Exports.		Imports.	
	Francs.		*Francs.*	
Great Britain	19,189,930	$3,703,656	41,660	$8,040
Italy	2,417,160	466,512	11,220	2,165
Belgium	2,043,820	394,457	148,710	28,701
Germany	1,859,420	358,868	599,720	115,746
United States	429,060	82,809	....	....
Austria-Hungary	....	....	46,200	8,917
Spain	398,100	76,833	7,100	1,370
Holland	351,010	67,745	10,000	1,930
Switzerland	278,260	53,704	44,670	8,621
Russia	203,900	39,353	....	....
Other foreign countries	1,281,540	247,337	1,580	305
Algeria	1,135,180	219,090	157,140	30,328
Tunis	379,920	73,325	....	....
Farther India	100,060	19,312	....	....
Other colonies	152,020	29,340	....	....
Total	30,213,380	5,832,341	1,068,000	206,000

Russian Commercial Museums in Persia.—The following is a translation made in the Bureau of Statistics, Department of Commerce and Labor, from the Revue du Commerce Extérieur, September 19, 1903:

The principal bureau of the Russian Company for Navigation and Commerce has just addressed a special circular to all large firms in the Empire, urging them to aid in the establishment of direct shipping facilities between Odessa and ports on the Oman Sea and Persian Gulf. A service of this kind would result in the planting of the Russian flag in those distant parts, where up to the present hardly any but English ships have visited; in opening new markets for Russian products; and in the bringing together of Russian exporters and Persian consumers, among whom England, in the absence of active competition, has acquired considerable influence. The Russian company has been working along these lines for ten years, and is encouraged to believe that the proper organization of Russian industries will result in Russian goods soon dividing the trade with English goods. In view of these considerations, the Imperial Government, according to the Moniteur Officiel of Odessa, has just arranged with this company to inaugurate this service. The company, thus encouraged, has decided to establish in the more important ports on the Oman Sea and Persian Gulf, particularly at Bassorah, permanent museums of Russian industry, which will be known as "Russian museums," and which will show as far as possible all the products exported from Russia. An agent, specially instructed to impart necessary information, will be stationed at each of the museums.

Export Tax on Tin Ore in the Malay States.—A correspondent in the Pall Mall Gazette, in discussing the prohibition on the export of tin ore, writes:

This action has been freely criticised in all circles throughout the Straits, but it is generally admitted to be a judicious step. If a protective tariff had not been imposed upon the export of tin ore from the Federated Malay States, America, taking 70 per cent or more of the whole supply of ore and smelting it herself, would in the fullness of time consider the smelting and refining of tin ore a new industry and promptly impose a protective tariff thereon by heavily taxing all slab tin coming into the country from the Straits Settlements and other countries. And what would be the result? The American market for slab tin would be closed to Straits shippers. Not only that, America, in taking such a large percentage of the output of tin ore, would practically be able to monopolize the supply and to fix her own prices for the raw material. The Straits mines and miners would be controlled by American companies engaged in the importation of tin ore, and sooner or later these companies would combine and another gigantic trust would come into being. But the step taken by the government of the Federated Malay States has prevented smelted tin from becoming an American monopoly. The duty of $30 per picul (133.3 pounds) practically means an ad valorem duty of 33 per cent on all tin ore exported from the Straits, and this is sufficient to rout all the ingenious schemes devised by enterprising Americans. That it is protection will not be denied; but it is protection for the purpose of preserving a local industry in the Straits Settlements and of making sure that the Federated Malay States, as producers, get their fair customs export revenue on their export of tin ore, and while hindering no one locally from buying and (or) smelting tin ore it keeps the Straits market in slab tin open to the world.

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